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A
WEEKLY REVIEW OF MEDICINE.

EDITED BY
FRANK P FOSTER, M.D.

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Original Communications.

THE SIGNIFICANCE OF GLYCOSURIA
IN CONNECTION WITH
DISEASE OF THE BRAIN AND CERVICAL CORD,
AND WITH DEMENTIA PARALYTICA.*BY ALLAN McLANE HAMILTON, M. D.,
NEW YORK.

THE occasional association of sugar as a urinary constituent with cerebral disease has attracted the attention of many recent observers, the latest of whom is De Jhonge,† who has brought forward a number of cases of disease of the pons and bulb, and has traced the relation between pathological changes in these regions and glycosuria and polyuria. Some of De Jhonge's cases show that disease and injury of the upper cord, with or without ascending degeneration, often give rise to very decided diabetic symptoms. Hayem found in two cases of glycosuria that gelatinous deposits and hyperplasia of connective tissue were present at the floor of the fourth ventricle, while Liouville and Potain found that the urinary deposit was associated with tumors which pressed upon the floor of the fourth ventricle and adjacent parts. Glycosuria has also been detected in connection with anterior cerebral disease, without bulbar lesion, by Chassaignac, who related the case of a man who fell from the sixth story of a building, sustaining a fracture of the right frontal bone and a lesion of the anterior lobe, and died three days afterward; but this case I think is exceptional.

In some of De Jhonge's cases there were œdema and albuminuria, while in others glycosuria was the only symptom. Friedreich, Stanley, Hayem, and Piorry have also brought forward examples which show that disease and injury of the upper cord, with or without ascending degeneration, often give rise to very decided diabetic symptoms.

It is unnecessary to refer to certain general forms of functional and organic disease of the brain in which polyuria may be a symptom. In most of these it is very probable that the posterior basal portion of the brain is involved, and in many cases the polyuria is of a character that can not be mistaken. The limpidity of the urine is a distinguishing feature, its specific gravity may be as low as 1.000, and as much as ten litres daily may be passed without any great loss of weight or strength. Such a condition of affairs I have repeatedly found to exist among hysterical women, and there is a variety of frontal headache I often find, the subjects being usually men who pass immense quantities of limpid urine during or after the paroxysm.

It is not of these cases I particularly wish to speak tonight, but of those of unmistakable organic disease of the brain in which glycosuria accompanies bulbar symptoms. Sometimes there may be albumin in association with sugar, and nearly always the quantity of urine has been greatly

augmented. Several years ago I found that in the early stages of general paresis of the insane there was very often glycosuria in connection with the pupillary and speech defects, a conclusion which has borne out the researches of Magnan, who considers the primary lesion to be medullary. Merson, who goes extensively into the urinalogy of general paresis, does not mention the appearance of sugar (in fact, I find no record of any search for it), but, while he holds that in the average number of cases there is no increase in the amount of urine excreted by these patients, he admits that in some cases there is a notable increase.

I recently saw a case which presented the features of a hybrid general paresis with bulbar, and finally very marked and persistent renal symptoms, the amount of urine voided daily exceeding twenty ounces at times, while at others it was scanty, but contained albumin or sugar at all times. During the past six weeks the patient's legs and feet have been the seat of a puffy swelling, the skin being red and glossy; and there was very slight pitting on pressure, which disappeared in the course of a few days. The patient's disease began with embarrassment in articulation, pupillary alteration, tremor of the tongue, and finally of the whole body, and then came the delusions of grandeur, which were of the most extravagant nature, and he became salacious in the extreme. Nearly all of the cranial nerves were affected. There were facial anæsthesia, impairment of smell and taste, and very curious vaso-motor changes, which consisted mainly in a discoloration of the skin of the left arm and hand. From time to time I found sugar in his urine, and this seemed to be the case after an attack of excitement.

With the kind assistance of Dr. Landon, of the Hudson River State Hospital for the Insane, I am enabled to present the records of urinary analyses in twelve cases of general paresis of the insane, which were made every day for fifteen days. In these patients the bulbar symptoms were marked and the urine was increased in quantity. In all there was a varying amount of sugar.

It may be stated that these patients were upon the same diet and treated precisely alike, so the results have more value than if the cases were selected at random.

Of these twelve cases, it will be seen that in two there was "considerable" sugar, and in one case there had been some months previously a large quantity found. In Case 6 both albumin and sugar were found. On ten occasions the former was present, and on five absent. It is to be noted that, as a rule, when albumin was present the sugar was not to be found, and *vice versa*. The quantity of sugar seemed to bear no important relation to the quantity of urine, and on days when no sugar was found the patient often passed from 50 to 60 oz. In some of the cases, however, this was not so.

In Case 1 the patient passed from 48 to 64 oz., and upon every occasion but one sugar was found, while in Case 2 rarely was more than 44 oz. passed, and this was on a day when the tests were negative. In one case (No. 8) the urine was of low specific gravity, pale in color, and greatly increased in quantity. None of the patients whose urine was examined got alcohol in any form during the time the ex-

* Read before the New York Clinical Society, February 22, 1882.

† "Archiv für Psychiatrie und Nervenkrankheiten," xiii, 3, 1882.

TABLES SHOWING THE VARIATION IN THE EXCRETION OF SUGAR IN TWELVE CASES OF GENERAL PARESIS AT THE HUDSON RIVER STATE HOSPITAL FOR THE INSANE.

EXAMINATION OF URINE FROM APRIL 9 TO 23, 1894.											
Date.	Name.	Age.	Sex.	Disease.	Duration of Disease.	Color.	Reaction.	Specific gravity.	Tests for albumin.	Tests for sugar.	Quantity.
CASE No. 1.											
April 9.	W. D. B.	51	Male.	General paresis.	2 years.	Yellow.	Acid.	1.025	No albumin.	Considerable sugar.	50 oz.
" 10.						"	"	1.025	"	Trace of sugar.	50 "
" 11.						"	"	1.024	"	"	54 "
" 12.						Straw.	"	1.025	"	"	58 "
" 13.						Bright yellow.	"	1.030	"	No sugar.	58 "
" 14.						"	"	1.030	"	Trace of sugar.	58 "
" 15.						Yellow.	"	1.030	"	"	64 "
" 16.						"	"	1.028	"	"	64 "
" 17.						"	"	1.028	"	"	58 "
" 18.						"	"	1.028	"	"	48 "
" 19.						"	Alkaline.	1.026	"	"	48 "
" 20.						Pale straw.	"	1.026	"	"	58 "
" 21.						Pale yellow.	Acid.	1.030	"	"	58 "
" 22.						"	"	1.028	"	"	58 "
" 23.						Yellow.	Alkaline.	"	"	"	48 "
CASE No. 2.											
April 9.	N. Y.	34	Male.	General paresis.	2 years.	Yellow.	Acid.	1.019	No albumin.	Trace of sugar.	44 oz.
" 10.						Reddish yellow.	"	1.032	"	"	40 "
" 11.						Bright yellow.	"	1.032	"	"	40 "
" 12.						"	"	1.030	"	No sugar.	40 "
" 13.						Yellow.	"	1.030	"	"	40 "
" 14.						Bright yellow.	"	1.032	"	"	40 "
" 15.						Yellow.	"	1.032	"	"	40 "
" 16.						"	"	1.030	"	Trace of sugar.	40 "
" 17.						Bright yellow.	"	1.035	"	No sugar.	40 "
" 18.						"	"	1.032	"	"	40 "
" 19.						Yellow.	"	1.034	"	"	40 "
" 20.						"	"	1.030	"	Trace of sugar.	42 "
" 21.						"	"	1.030	"	No sugar.	44 "
" 22.						Bright yellow.	"	1.032	"	"	42 "
" 23.						"	"	1.030	"	"	40 "
CASE No. 3.											
April 9.	G. B. M.	46	Male.	General paresis.	Not known.	Bright yellow.	Acid.	1.030	No albumin.	No sugar.	30 oz.
" 10.						"	"	1.028	"	"	30 "
" 11.						Yellow.	"	1.030	"	"	30 "
" 12.						"	"	1.025	"	"	30 "
" 13.						"	"	1.030	"	"	30 "
" 14.						"	"	1.030	"	Trace of sugar.	34 "
" 15.						"	"	1.030	"	No sugar.	30 "
" 16.						"	"	1.030	"	"	20 "
" 17.						"	"	1.030	"	"	30 "
" 18.						Bright yellow.	"	1.030	"	Trace of sugar.	30 "
" 19.						Yellow.	"	1.030	"	"	30 "
" 20.						Pale yellow.	"	1.030	"	No sugar.	34 "
" 21.						"	"	1.010	"	Trace of sugar.	34 "
" 22.						"	"	1.015	"	No sugar.	34 "
" 23.						Yellow.	"	1.015	"	"	34 "
CASE No. 4.											
April 9.	E. C.	35	Male.	General paresis.	2½ years.	Bright yellow.	Acid.	1.030	No albumin.	Trace of sugar.	36 oz.
" 10.						Yellow.	"	1.030	"	Considerable sugar.	40 "
" 11.						"	"	1.024	"	Sugar.	42 "
" 12.						"	"	1.028	"	Trace of sugar.	36 "
" 13.						Bright yellow.	"	1.032	"	"	50 "
" 14.						Light yellow.	"	1.015	"	"	50 "
" 15.						Straw.	"	1.030	"	"	42 "
" 16.						Yellow.	"	1.030	Trace of albumin.	No sugar.	40 "
" 17.						"	"	1.024	No albumin.	Trace of sugar.	50 "
" 18.						Straw.	"	1.026	"	"	50 "
" 19.						Pale straw.	Alkaline.	1.025	"	"	48 "
" 20.						"	Acid.	1.015	"	No sugar.	40 "
" 21.						Yellow.	"	1.020	"	"	52 "
" 22.						Pale yellow.	"	1.015	"	Trace of sugar.	38 "
" 23.						"	"	1.020	"	"	44 "
CASE No. 5.											
April 9.	H. C.	44	Male.	General paresis.	Not known.	Yellow.	Acid.	1.025	No albumin.	No sugar.	44 oz.
" 10.						"	"	1.028	"	"	50 "
" 11.						Light straw.	"	1.022	"	Trace of sugar.	50 "
" 12.						"	"	1.020	"	"	48 "
" 13.						Very light straw.	"	1.020	"	"	50 "
" 14.						Pale yellow.	"	1.020	"	No sugar.	48 "

TABLES SHOWING THE VARIATION IN THE EXCRETION OF SUGAR IN TWELVE CASES OF GENERAL PARESIS AT THE HUDSON RIVER STATE HOSPITAL FOR THE INSANE.—(Continued.)

Date.	Name.	Age.	Sex.	Disease.	Duration of Disease.	EXAMINATION OF URINE FROM APRIL 9 TO 23, 1884.					
						Color.	Reaction.	Specific gravity.	Tests for albumin.	Tests for sugar.	Quantity.
April 15.	H. C.	44	Male.	General paresis.	Not known.	Pale yellow.	Acid.	1-020	No albumin.	No sugar.	48 oz.
" 16.	"	"	"	"	"	"	"	1-022	"	"	50 "
" 17.	"	"	"	"	"	"	"	1-020	"	"	50 "
" 18.	"	"	"	"	"	Light straw.	"	1-022	"	Trace of sugar.	40 "
" 19.	"	"	"	"	"	Pale yellow.	"	1-028	"	No sugar.	50 "
" 20.	"	"	"	"	"	"	"	1-026	"	Trace of sugar.	50 "
" 21.	"	"	"	"	"	"	"	1-020	"	No sugar.	40 "
" 22.	"	"	"	"	"	Yellow.	"	1-020	"	"	50 "
" 23.	"	"	"	"	"	Pale yellow.	"	1-022	"	"	50 "
CASE No. 6.											
April 9.	M. M.	59	Male.	General paresis.	6 years.	Yellow.	Neutral.	1-026	Trace of albumin.	No sugar.	50 oz.
" 10.	"	"	"	"	"	"	"	1-020	"	"	44 "
" 11.	"	"	"	"	"	Light straw.	Alkaline.	1-028	"	"	40 "
" 12.	"	"	"	"	"	Pale straw.	"	1-025	No albumin.	"	48 "
" 13.	"	"	"	"	"	Straw.	Acid.	1-022	Trace of albumin.	"	50 "
" 14.	"	"	"	"	"	Pale yellow.	Alkaline.	1-020	"	"	50 "
" 15.	"	"	"	"	"	Pale straw.	"	1-025	"	"	42 "
" 16.	"	"	"	"	"	Pale yellow.	"	1-025	No albumin.	"	50 "
" 17.	"	"	"	"	"	Pale straw.	"	1-022	Trace of albumin.	"	48 "
" 18.	"	"	"	"	"	Very pale straw.	"	1-022	No albumin.	"	48 "
" 19.	"	"	"	"	"	Pale yellow.	"	1-022	Trace of albumin.	"	40 "
" 20.	"	"	"	"	"	Pale straw.	"	1-022	"	"	50 "
" 21.	"	"	"	"	"	Pale yellow.	"	1-025	"	"	50 "
" 22.	"	"	"	"	"	"	"	1-022	No albumin.	Trace of sugar.	44 "
" 23.	"	"	"	"	"	"	"	1-025	"	"	50 "
CASE No. 7.											
April 9.	J. P.	43	Male.	General paresis.	3 years.	Bright yellow.	Acid.	1-030	No albumin.	No sugar.	40 oz.
" 10.	"	"	"	"	"	Yellow.	Neutral.	1-028	"	Trace of sugar.	40 "
" 11.	"	"	"	"	"	Very light straw.	Acid.	"	"	No sugar.	38 "
" 12.	"	"	"	"	"	Pale yellow.	"	1-028	"	"	40 "
" 13.	"	"	"	"	"	"	"	"	"	"	"
" 14.	"	"	"	"	"	"	"	1-020	"	"	38 "
" 15.	"	"	"	"	"	Yellow.	"	1-028	"	"	40 "
" 16.	"	"	"	"	"	Pale yellow.	"	1-015	"	"	40 "
" 17.	"	"	"	"	"	"	"	1-022	"	"	38 "
" 18.	"	"	"	"	"	Pale straw.	Alkaline.	1-018	"	"	40 "
" 19.	"	"	"	"	"	Very pale straw.	Acid.	1-022	"	"	38 "
" 20.	"	"	"	"	"	Pale straw.	"	1-018	"	Trace of sugar.	38 "
" 21.	"	"	"	"	"	Pale yellow.	"	1-025	"	"	38 "
" 22.	"	"	"	"	"	"	"	1-022	"	No sugar.	38 "
" 23.	"	"	"	"	"	"	Alkaline.	1-030	"	"	40 "
CASE No. 8.											
April 9.	W. M.	30	Male.	General paresis.	Not known.	Bright yellow.	Acid.	1-015	No albumin.	No sugar.	50 oz.
" 10.	"	"	"	"	"	Yellow.	"	1-020	"	Trace of sugar.	58 "
" 11.	"	"	"	"	"	Very light straw.	"	1-008	"	No sugar.	50 "
" 12.	"	"	"	"	"	Straw.	"	1-020	"	Trace of sugar.	58 "
" 13.	"	"	"	"	"	Yellow.	"	1-025	"	"	48 "
" 14.	"	"	"	"	"	"	"	1-020	"	"	48 "
" 15.	"	"	"	"	"	Straw.	"	1-010	"	No sugar.	48 "
" 16.	"	"	"	"	"	Pale yellow.	"	1-015	"	"	50 "
" 17.	"	"	"	"	"	Yellow.	"	1-020	"	"	44 "
" 18.	"	"	"	"	"	Pale straw.	"	1-015	"	"	50 "
" 19.	"	"	"	"	"	"	"	1-014	"	Trace of sugar.	50 "
" 20.	"	"	"	"	"	Pale yellow.	"	1-022	"	"	50 "
" 21.	"	"	"	"	"	"	Neutral.	1-012	"	No sugar.	48 "
" 22.	"	"	"	"	"	Yellow.	Acid.	1-015	"	Trace of sugar.	52 "
" 23.	"	"	"	"	"	Pale yellow.	"	1-010	"	No sugar.	50 "
CASE No. 9.											
April 9.	R. C.	57	Male.	General paresis.	3 years.	Reddish yellow.	Acid.	1-030	No albumin.	No sugar.	36 oz.
" 10.	"	"	"	"	"	Yellow.	"	1-018	"	Trace of sugar.	48 "
" 11.	"	"	"	"	"	Light straw.	"	1-018	"	No sugar.	44 "
" 12.	"	"	"	"	"	Straw.	"	1-015	"	"	44 "
" 13.	"	"	"	"	"	Yellow.	"	1-020	"	Trace of sugar.	40 "
" 14.	"	"	"	"	"	"	"	1-025	"	No sugar.	42 "
" 15.	"	"	"	"	"	Pale yellow.	"	1-020	"	"	48 "
" 16.	"	"	"	"	"	Yellow.	"	1-018	"	"	36 "
" 17.	"	"	"	"	"	Pale yellow.	Alkaline.	1-015	"	"	50 "
" 18.	"	"	"	"	"	Straw.	"	1-028	"	"	48 "
" 19.	"	"	"	"	"	Pale straw.	Acid.	1-024	"	"	50 "
" 20.	"	"	"	"	"	Pale yellow.	"	1-016	"	"	50 "
" 21.	"	"	"	"	"	"	Alkaline.	1-015	"	"	40 "
" 22.	"	"	"	"	"	"	"	1-020	"	"	50 "
" 23.	"	"	"	"	"	"	Acid.	1-020	"	"	50 "

TABLES SHOWING THE VARIATION IN THE EXCRETION OF SUGAR IN TWELVE CASES OF GENERAL PARESIS, AT THE HUDSON RIVER STATE HOSPITAL FOR THE INSANE.—(Concluded.)

						EXAMINATION OF URINE FROM APRIL 9 TO 23, 1884.					
Date.	Name.	Age	Sex.	Disease.	Duration of disease.	Color.	Reaction.	Specific gravity.	Tests for albumin.	Tests for sugar.	Quantity.
CASE No. 10.											
April 9.	W. R.	35	Male.	General paresis.	1 year.	Yellow.	Neutral.	1.030	No albumin.	Trace of sugar.	50 oz.
" 10.						"	"	1.020	"	No sugar.	54 "
" 11.						Bright yellow.	Acid.	1.023	"	"	50 "
" 12.						"	"	1.030	"	"	46 "
" 13.											
" 14.						Yellow.	"	1.028	"	"	36 "
" 15.						Reddish yellow.	"	1.032	"	"	48 "
" 16.						Pale yellow.	Alkaline.	1.030	"	"	50 "
" 17.						Bright yellow.	"	1.032	"	"	58 "
" 18.						Straw.	Neutral.	1.022	"	"	50 "
" 19.						Yellow.	Acid.	1.020	"	"	48 "
" 20.	Five months ago urine contained considerable sugar.					"	Alkaline.	1.030	"	"	46 "
" 21.						Reddish yellow.	"	1.020	"	"	48 "
" 22.						"	Acid.	1.028	"	"	50 "
" 23.						"	Alkaline.	1.020	"	"	50 "
CASE No. 11.											
April 9.	H. A. S.	47	Male.	General paresis.	2 years.	Yellow.	Acid.	1.015	No albumin.	No sugar.	34 oz.
" 10.						Bright yellow.	"	1.028	"	Trace of sugar.	42 "
" 11.						Yellow.	"	1.020	"	"	36 "
" 12.						Straw.	"	1.014	"	No sugar.	42 "
" 13.						Yellow.	Alkaline.	1.025	"	"	40 "
" 14.						Very pale straw.	Acid.	1.010	"	"	44 "
" 15.						Yellow.	"	1.022	"	Trace of sugar.	32 "
" 16.						Pale yellow.	"	1.012	"	"	
" 17.						Pale straw.	"	1.012	"	No sugar.	34 "
" 18.						Yellow.	Neutral.	1.028	"	Trace of sugar.	40 "
" 19.						"	Acid.	1.020	"	No sugar.	40 "
" 20.						"	"	1.022	"	Trace of sugar.	36 "
" 21.						Pale yellow.	"	1.015	"	No sugar.	40 "
" 22.						"	"	1.010	"	"	40 "
" 23.						"	"	1.012	"	"	40 "
CASE No. 12.											
April 9.	J. H. P.	43	Male.	General paresis.	2½ years.	Pale yellow.	Acid.	1.015	No albumin.	No sugar.	38 oz.
" 10.						Yellow.	"	1.018	"	"	40 "
" 11.						Pale straw.	"	1.018	"	"	44 "
" 12.						Very pale straw.	"	1.010	"	"	50 "
" 13.						Yellow.	"	1.022	"	Trace of sugar.	44 "
" 14.						"	"	1.025	"	No sugar.	48 "
" 15.						Pale yellow.	"	1.010	"	"	44 "
" 16.						"	"	1.028	"	"	40 "
" 17.						"	"	1.020	"	"	50 "
" 18.						Pale straw.	Alkaline.	1.020	"	"	50 "
" 19.						"	"	1.020	"	"	50 "
" 20.						"	Acid.	1.014	"	"	48 "
" 21.						Pale yellow.	"	1.010	"	Trace of sugar.	50 "
" 22.						Yellow.	"	1.025	"	No sugar.	50 "
" 23.						Pale yellow.	"	1.024	"	"	50 "

CONDENSED TABLE OF AVERAGES, ETC., IN TWELVE CASES OF GENERAL PARESIS.

	Sex.	Age.	Duration.	Daily quantity.	No. of times sugar.	Average specific gravity.
1	Male.	51	2 years.	55.7 oz.	14	1.0258
2	"	34	2 years.	40.8 "	5	1.034
3	"	46	Not known.	31.6 "	3	1.02513
4	"	35	2½ years.	43.13 "	11	1.0244
5	"	44	Not known.	47.13 "	5	1.0225
6	"	59	6 years.	46.14 "	2*	1.0222
7	"	43	3 years.	39.2 "	3	1.0218
8	"	30	Not known.	50.4 "	7	1.0161
9	"	57	3 years.	45.11 "	2	1.0202
10	"	35	1 year.	48.12 "	1†	1.0261
11	"	47	2 years.	38.8 "	6	1.0183
12	"	43	2½ years.	46.2 "	2	1.0133

aminations were made. During the time the tests were made there were no influences, so far as was known, that

* Albumin upon ten occasions. † Five months ago considerable.

could have affected the excretion of sugar. The physical symptoms were those ordinarily observed in cases of general paresis—motorial disturbances, such as tremulousness of the tongue and of the muscles of the upper and lower extremities, difficulty in swallowing and articulation, and fibrillary twitchings. R. W. C. and W. H. R. are bed-ridden. In the other cases the gait is more or less uncertain and staggering. H. C., J. P., R. W. C., M. M., W. H. R., and E. C. have partial or complete paralysis of the sphincters. All the patients are in a demented condition to a greater or less degree. J. H. P., R. W. C., J. P., M. M., and W. S. have exalted delusions.

The tests used for the determination of sugar were Fehling's (the solutions being freshly prepared), chromate of potassium, and the carmine-indigo.

Merson's observations are valuable in showing the fact that the quantity of uric acid is increased in the majority of

cases, while phosphoric acid and the chlorides are diminished. The amount of urine, estimated according to the weight of the body in seventeen cases examined by him, was slightly in excess of that excreted by six healthy men. Taking the standard of Parkes, which is fifty-two ounces, the quantity of urine in my cases was diminished; but, according to the estimates of Dalton, which seem more reasonable, and taking into account the amount lost during defecation, which it was impossible to collect, I am quite sure that there was, especially in Cases 1, 8, and 10, a notable increase. If we take special days, as in Cases 1, 8, and 10, there can be no doubt of this. The average specific gravity in Merson's cases was 1.019, in my own 1.0228. The maximum specific gravity in Merson's seventeen patients was 1.032, in my own 1.035.

Ebstein is the only observer, so far as I know, who has found glycosuria as a symptom of epilepsy. A remarkable case of this disease came under my observation a few weeks ago, in which saccharine urine was a feature. The attacks were of a type which is somewhat unusual, and certain symptoms suggested an invasion of the cerebellum and possibly the bulb. Mr. T. is a stock broker, aged thirty-eight. He had, eight years ago, while upon the floor of the Exchange, a convulsive attack, attended by loss of consciousness, and his body was drawn to the right side. He had three more of these the same day, and each day since has had from four to six, the immediate cause being excitement. The seizures were rather of the nature of *petit mal*, but he has had two attacks of *grand mal* at night, when the convulsions were very severe, both forearms and hands being flexed and the head drawn backward. There was stupor, which deepened, with stertorous breathing, and recovery followed in five or ten minutes. During my visit he had two light attacks, the first of which occurred when he took my hand for the purpose of shaking it. He then suddenly lost consciousness and began to moan, the sounds being rhythmical. The body was drawn over to the right side in tonic spasm, the head bent toward the right, the eyes were open, and the pupils widely dilated. He was exceedingly livid, and the pulse weak and intermittent. The loss of consciousness was transitory, and he made a quick recovery. On a subsequent examination his tongue pointed to the right side, the face was drawn to the left, and the tendon-reflexes were increased on the left side. He has had attacks of transient ataxic aphasia, diplopia, and formication of both lower extremities, but no anesthesia, and has had seizures when he would walk in a circle. There was advanced neuritis in both eyes. The second attack, which occurred during my visit, was somewhat curious, and came on while I was testing his patellar reflex, when his body was drawn to the left side instead of the right, and the right tendon-reflex became exaggerated. There is sometimes an epigastric aura. No ascertainable cause exists, and the patient absolutely denies syphilis. In this case much interest arises from the fact that during the past six months the patient has passed great quantities of urine, and examinations, made both by his own physician and by myself, show large amounts of sugar. In this case also there was unequal vaso-motor disturbance in the lower extremities.

THE TREATMENT OF EPILEPSY.

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(Concluded from page 714, Vol. XXXIX.)

Eclampsia, it is well known, is but a term that is sanctioned by usage to designate a convulsion occurring in children or from some unmistakable cause—as pregnancy, uræmia, organic cerebral disease, etc.—ceasing upon removal of the cause, and seldom leading to general and gradual deterioration of the mental faculties. Eclampsia is, in other words, an acute convulsion, relatively innocuous. Epilepsy, on the other hand, is a term denominating a series of convulsions usually occurring at intervals throughout some period of time, and entailing serious alteration of the mind and nervous system; or, in brief, epilepsy is a chronic convulsive disorder. The one is, by itself, so far as the single fit is concerned, clinically indistinguishable from the other. Eclampsia may, therefore, very properly be said to be an acute epilepsy, and epilepsy to be a chronic eclampsia. How, then, are we to tell, when confronted with a convulsion in a child, either below three years of age or above, whether we are in the presence of epilepsy or not? We may weigh probabilities—that is, we may guess, and guess *ad libitum et in infinitum*, but we can not be certain. The convulsion may never be repeated, or repeated a few times only during the years of childhood, or it may recur at varying intervals throughout the passing years, until the dread conviction steals over us that the *morbus sacer*, the fell disease of the inscrutable gods, is indeed before us. It would be most consistent with facts to regard every convulsion in childhood with solicitude. The following cases will, I think, substantiate these statements:

Male, aged twenty. Grand mal once or twice yearly since she was a year and a half old.

Male, aged five. Grand mal since one year of age.

Male, aged ten. Grand mal since one year old.

Female, aged eight. Had convulsions when about three years old. None again for six years. The next interval was about eleven months, and the last interval, before coming to me, about three weeks.

Female, aged thirteen. Had a fit when about eighteen months old, while cutting her teeth; another, when four years old, during scarlatina. None again till the eleventh year, since when patient has had grand mal.

Female, aged three. Has grand mal, which began when she was six months old.

Female, aged twenty-three. When about eighteen months old had a fit, ascribed to eating pickles. Another in seventh year, attributed to the same cause. About thirteen months after this fits began to come steadily, and she has now grand mal.

Gowers,* speaking of the same aspect of the question, says: "A large number of cases, no less than twelve and a half per cent. of the whole, commenced during the first three years of life. In this group no cases of simple infantile convulsions are included, only such as, beginning in infancy, continued as chronic epilepsy. There is a difficulty in ascertaining the exact date of commencement in all cases.

* *Op. cit.*, p. 14.

Of about one third, all that could be learned was that they began in infancy. . . . The number of cases is largest in the first year (five and a half per cent. of the whole), and falls rapidly to three years of age, and then more slowly until five, when the minimum for the early period of life occurs—only one seventh per cent. commencing."

Dr. Gowers obtained these figures from an analysis of 1,450 cases.

Occasionally it will happen that a seeming malarial attack will, in a person predisposed to epilepsy, be the immediate cause of the attacks, which will cease upon treatment of the seeming malaria.

R. D., aged fourteen. Lives in a malarious district. About six years ago had two or three fits. None since, until a late attack of malaria, which appears every week in the afternoon—which day can not be ascertained, nor as to whether there is regular periodicity—being characterized by the typical cold, hot, and sweating stages, during which the fits have again occurred; never at any other time. There is an abdominal aura with cry, unconsciousness, foam at the mouth, clonic convulsions, but no sleep afterward; only a yawning and wearied feeling. Tongue clean; bowels regular. The child was placed on a milk and farinaceous diet, was given a cholagogue, alkalies, later on a bitter tonic, and had no return of the fever or fits for five months that it remained under my treatment. I know nothing of its subsequent history.

The question of epilepsy from so-called reflex irritants is one of some clinical importance. As we have seen, epilepsy is readily influenced by many reflex impressions; so that we can comprehend that—as I know to be a fact from oft-repeated experiences—a circumcision, a removal of preputial adhesions, a divulsion or cutting of urethral strictures, a clitoridectomy, an operation upon the vagina or uterus, a nerve-stretching, a trephining, may each have a temporarily beneficial effect upon an epilepsy. But do genital or other reflex irritations ever cause an epilepsy? This is a matter as yet *sub judice*. I have never seen epilepsy caused by genital irritations, or heard of it, although I have both seen and heard of cases alleged to have had such a causation, in none of which, however, had the foregoing considerations been sufficiently weighed to render the proof adequate. It would certainly seem that distinct irritation, as by tumor, of peripheral nerves could set up epilepsy, and especially has this been so in those cases of laryngeal epilepsy or vertigo induced by tumors of the vocal cords.* Other than this, the subject needs elaboration.

We should, therefore, keep this picture of an epilepsy clearly before us: Easily influenced by manifold impressions, whether of medicaments or upon nerves of general or special sensation; occasionally quasi-periodical; occasionally inter-convertible with migraine; often occurring at long intervals, generally at very irregular intervals; occasionally manifesting itself, to all appearance, in a solitary convulsion; occasionally beginning in early childhood or infancy; at times seemingly stimulated to activity by malaria; possibly caused by special reflex irritations.

I presume it will be understood that I am referring

throughout this paper to that form of epilepsy which is functional in the sense that it is not caused by underlying recognizable organic disease of the brain or cord. Epileptic convulsions—or, as they should be styled, *epileptiform* convulsions—that proceed from intra-cranial syphilis, myelitis, disseminated sclerosis, meningitis, tumors of the cerebro-spinal axis, vertebral disease, etc., constitute an entirely different group of symptoms, as need hardly be said.

I know of no writer who has taken full account of all these characteristics of epilepsy. Yet there can be no question whatsoever but that no just conclusions can be based upon the results following any method of treatment unless all these characteristics are kept in mind. An interval of ten or twenty years may be ascribed to some pet method of treatment, doubtless often has been, by one ignorant of the fact that cases may run in this way when left untreated; or an epilepsy, inter-convertible with a migraine, may temporarily seem to improve to one who is not alive to the fact that the migraine is growing worse, and may do the patient as much harm as the unchecked epilepsy; or enthusiasts may laud to the heavens some new operation—such as the latest surgical novelty of tying the vertebral artery—some varying time after which the epilepsy is better; or other enthusiasts may, in like manner and with like reason, claim cures for new medicaments.

The treatment of epilepsy should, therefore, embrace many other details than the mere administration of drugs. Anything that might possibly act as a cause or an excitant must first be sedulously sought for, and, if it is possible to do so, it should be promptly removed. Even though we can not bring ourselves to believe that it is adequate to set the epilepsy agoing, we should have no right to indulge our doubts at the possible expense of our patient. In the terse phrase of the lawyers, we should give our patient the benefit of the doubt. The simple question should be: Is the removal of the possible cause or irritant likely to do more harm than its presence? If not, it should be removed. For this reason I always remove all genital irritations, either of the male or female, as well as all peripheral irritations of any kind. In cases of injury to the skull, when there is reason to suspect a fracture of the inner table, or some intra-cranial disease beneath the point of injury, I believe that the trephine should be used unhesitatingly. The operation is attended with little danger, by it some serious irritant may be removed, and, even in the event that no focus of mischief is discovered, temporary improvement will be almost certain to follow. In other words, the operation may do great permanent good, is almost certain to do considerable temporary good, and is almost certain to do no harm.*

The natural course of the particular epilepsy which we are treating should also be studied. We should gain as accurate an idea as possible of the frequency of the fits; whether they are of the nature of *grand mal* or *petit mal*; what relation in frequency the attacks of *grand mal* bear to those of *petit mal*; whether there intervene mere muscular twitches or mere vertigo, and how often; what the intervals are between the different individual fits and the differ-

* "Laryngeal Epilepsy," L. C. Gray, "New England Med. Monthly," Nov., 1882.

* I hope, at some future time, to dwell at length and in detail upon the considerations that should prompt the use of the trephine.

ent groups of fits; how these intervals vary from time to time in their average, and their minimum and their maximum. In endeavoring to ascertain this, it will not do to trust entirely to the patient's memory, for not only is that defective, but the patient can not, of course, know anything of what transpired during his unconsciousness except what is afterward told to him. I make a rule, therefore, of obtaining this history from some near relative.

In the treatment of the epilepsy itself, the bromides certainly seem to be the remedies that are most effective. If statistical proof be asked in support of this opinion, it would be impossible to give it, because almost all the statements of writers are full of the errors that I have alluded to. Indeed, I can not conceive how it would be possible to prove the superiority of one anti-epileptic treatment over another unless it should happen, as it has never done, that some one treatment promptly cured the disease outright. In order to carry out such a comparison of treatments, we should need at least fifty to one hundred patients for each particular method; and if we were only to test the drugs that have their advocates at the present day—the bromides, belladonna, oxide of zinc, nitro-glycerin, borax, digitalis, ligature of the vertebral artery—we should require three hundred and fifty to seven hundred patients. The imagination stands appalled at the myriads of victims who would be needed to set at rest the conflicting claims of all the remedies that have been popular at different times. It would not do to go into our public institutions for these, inasmuch as such patients consist of the most inveterate, generally hopeless, cases. We must depend, then, for our human supply upon out-door clinics and our private practices. But, even supposing that this number of patients could be seen in private practice and out-door clinics, it would be simply impossible to keep them under observation long enough to be certain of results. The basis for the statement of this superiority of the bromides is in the widespread professional belief to this effect. Many other remedies have worked seemingly brilliant results. The great Trousseau narrates some excellent cases in which belladonna has been very effective. Schroeder van der Kolk gives some remarkable accounts of how he successfully managed apparently hopeless cases by means of issues and setons. Kuntze speaks of great improvement from the administration of woorara. But of no one drug is the testimony to its efficacy so great as it is with the bromides. From all countries, in many languages, by specialists and non-specialists, the praises of the bromides are sung. Yet, while I believe that this wide-spread belief is fair evidence that the bromides are superior to other remedies, I can not admit the cures that are claimed for them, because, as I have endeavored to demonstrate in this paper, cases are seldom kept under observation long enough to make sure of a cure, and also because we can only determine approximately, in any given individual, what shall be called a cure.

The abundant physiological researches that have been made into the action of the bromides, more especially of the bromide of potassium, have made clear that their chief effect is as a depressant of certain involuntary reflexes. Thus, a frog poisoned by this method could not be made to exhibit

ordinary reflex actions at the same time that all voluntary movements were properly performed. H. C. Wood, whose *résumé* of the subject is painstaking and judicious, believes that this depression of reflex action is due mainly to the effect of the drug upon the spinal cord. Large doses depress the heart—whether from direct action upon the organ itself, or from an abolition of the reflex of the cardiac centers, is as yet undecided.* Clinical evidence, supplementing the physiological, has shown that the bromides will abolish the pharyngeal reflex without any simultaneous impairment of sensation, will greatly impair the memory, may even cause a spurious aphasia, will weaken the intellect, depress the spirits, impair digestion, depress the vaso-motor system, produce great muscular weakness, and, in some exceptional instances, superinduce maniacal excitement.† The bromides would therefore seem to be depressants of certain portions of the central nervous system, such as are necessary for the performance of certain reflex actions. Ordinarily this sedative action is one that is remarkably safe as regards life. I have repeatedly given children as much as 3 ij to 3 ss. of potassium or sodium bromide daily steadily for months with good results, and I am constantly giving these doses to adults for long periods of time. In testing a plan of treatment recommended by Dr. Gowers, I have several times given an ounce of the potassium bromide at one dose, with no other result than to lower the pulse some twelve to eighteen beats for a few hours.

But there are certain individuals, constituting a very troublesome minority, who are dangerously susceptible to the action of the bromides. An epileptic patient of mine, a boy of ten, although robust in appearance, was yet reduced to a condition of imbecility and such general weakness that he could not rise from bed by a three days' treatment with ten-grain doses of the bromide of potassium. He passed out of my care into the hands of a gentleman who ordered him to take the bromide for three months. He took to bed as before, and, when he came out of it, he went to Greenwood Cemetery. An epileptic, demented youth was brought to my clinic. I ordered him a mixture containing potassium bromide, gr. xv, and sodium bromide, gr. x. I was sent for in hot haste shortly after he had taken his first dose, found him in a state bordering on collapse, and had great difficulty in restoring him. I saw in consultation, some three years ago, a young lady who had had a few epileptic attacks, for which she had been steadily treated with large doses of the bromides during a period of about six months. She was in bed, almost pulseless, pallid, thin, exhibiting great mental sluggishness, being made to answer questions with great difficulty, weeping at times without cause, somnolent. Her life had been despaired of, and two eminent gentlemen had made a diagnosis of grave organic nervous disease. I recommended the withdrawal of the bromides, the substitution of stimulants, tonics, and a nourishing diet, and the patient was about in a few weeks. A professional gentleman who consulted me had had some commingled malarial and lithæmic symptoms which had been diagnosed as cerebral congestion, and the bromide of potassium

* H. C. Wood.

† Bannister.

was ordered. It was taken for about four months, in twenty-grain doses thrice daily. The result was to impair a naturally fine and unusually vigorous mind to such a degree that the memory was seriously affected, an emotional state was induced to such an extent that weeping would follow the most trivial incident, and most of the day was spent in sleep. I have never seen a more pitiable spectacle than this naturally energetic, robust, and keen-minded individual after four months of this accursed treatment. A few weeks of tonics, stimulants, and good diet restored his tone to a large degree, but it was fully two years before he recovered his former energy of mind and body. I am constantly seeing such cases as these, and, together with other ill results that have come to my notice from the wholesale use of the drug at the present day, they have made me seriously aware of the fact that the bromides are necessary evils. We should so regard them in the treatment of epilepsy. Not one grain more should be given than is absolutely necessary.

I usually begin the treatment with ten-grain doses of the potassium bromide twice daily, and double the dose at night, as suggested by M. Brown-Séquard, because the interval between the evening and the morning doses is longer than that between any others. The quantity is gradually increased by five grains at a dose every few days until the pharyngeal reflex is abolished or the attacks diminish. This abolition of the pharyngeal reflex, which was first suggested as a criterion by Voisin, can be tested by means of a spoon or a spatula touching the pharynx. In the majority of cases, when this is abolished it is safe to stop increasing the dose, because, for a time at least, the epilepsy will be held in check. But it is by no means the infallible test that it is stated to be. It will often be abolished without the epilepsy being affected to any great extent; or, in other instances, the epilepsy will improve long before it is abolished. If, then, this reflex of the pharynx disappears, I pause in the dosage, and wait to see whether the symptoms improve. Should the symptoms improve before this reflex disappears, I also pause in the dosage. I then begin to habituate my patient to the dosage to which I have attained, which, by the by, varies very greatly with different individuals. Usually by this time the patient shows distinct signs of bromism, pallor, quicker and weaker pulse, dull visage, perhaps a foul breath, sometimes drowsiness in the daytime. The next problem to which I set myself is to drive off these so-called signs of bromism without at the same time diminishing the influence of the bromides over the epilepsy. This seems paradoxical at first sight, but I know that it can be done, as I pointed out several years ago,* and I do it by the addition of alteratives and tonics—if need be, even of stimulants—to the bromides. If the individual is in very poor general health, I use tonic doses of quinine for a few days; and I do this in some cases from the start. But the larger number of patients do best upon cod-liver oil and arsenic, or iron, if there is any anæmia. I always look carefully after the diet, seeing to it that they obtain as much nutritious food as their age, habits, race,

heredity, circumstances, and health will enable them to properly digest and assimilate. I am forced to put the matter in this general way, because, were I to go into all the dietetic details, I should write another paper as long as this.

This process of getting the patient habituated to the bromides is one that requires a variable time in different persons. As a rule, it is done in about a month, but some organisms will tolerate the drug well almost from the start, while with others it needs months, and upon some it will have such pernicious effects that it must be discontinued at once.

Having habituated the patient in this manner, I let him go steadily along without any alteration in his medicines until the improvement shows some signs of arrest. Then, if the patient has so far borne the bromides well, I increase each dose by five to ten grains. If, after another period of improvement, there again comes a relapse, I push the dose still further, and, if need be, increase it again and again. Sooner or later, however, a point will be reached when it becomes evident that it would be dangerous to increase the dose, and still the disease is evidently not entirely under control. For a long time I was baffled when I reached this point. But I ascertained that if now, without diminishing the dose that we have been giving, we administer some other of the drugs that have been found to be anti-epileptic, we can usually hold the malady still further in check. Of these adjuvants, I prefer, in the order in which they are named, sodium bromide, belladonna, digitalis, borax. With the ammonium and lithium bromides I have had too limited an experience to enable me to speak positively, although I think they will act about as their sodium fellow does. The oxide of zinc has not been successful in my hands. I like the digitalis in asthenic cases, and the belladonna in children. Ringing the changes upon one or the other of these drugs, I keep steadily on with the treatment so long as I maintain a control of the epilepsy. By this time it is generally the case that the better part of a year has passed by, or even a year or two. When it becomes plain that the epilepsy is slipping from control, I proceed to make some radical change in the treatment. Should the patients' circumstances permit it, I have them obtain an entire change of air. To others I give a vigorous emetic, or a sharp purgation, and follow it up with a decided change in the diet; and then I begin another long course of treatment with another of the drugs which I have named, making the others act as adjuvants from time to time, but in a different order from that in which they were given before.

With this method of treatment, I find that I am able to keep under control most of the cases of epilepsy that are brought to me. I do not pretend to have made absolute cures. Some of my patients have gone long times without fits: one over three years, and several for two to three years.

The quasi periodicity to which I have alluded has often a practical importance. Where these quasi-periodical attacks are far apart, as every month or at longer intervals, it may be possible to control them by administering the bromides at about the time when they are to be expected, and not in the interval, the patient being thus spared all the enervating effects of the drug. With individuals who live mainly

* "The Use of Quinine with Nervous Sedatives," "Arch. of Med.," Oct., 1880.

by their mental efforts this may be an extremely important desideratum, for I am fully persuaded that no man's mind is up to par when that man is under a course of the bromides. But it is not every case that can be safely treated in this way, for while in some the epilepsy will be held perfectly in abeyance, in others, when thus checked at its regular periods, it will break out, often with increased violence, at unusual times, then necessitating the continued treatment. Every quasi-periodical case should, for this reason, be carefully studied.

An epilepsy that is inter-convertible with a migraine must also be treated through the latter disease. In addition, then, to the anti-epileptic medication should be employed such remedies as extract of *cannabis indica*, caffeine, the alkalies, etc.

In conclusion, I desire to emphasize the fact that the general health of every epileptic must be sedulously cared for by every resource of medical art. It is too much the custom to give the bromides and do nothing further.

Those individuals, not infrequently encountered, upon whom the bromides act so deleteriously, will usually respond, to a certain extent, to belladonna and the other remedies. But it has been my experience that such cases are usually very intractable; so that such a peculiar susceptibility to the bromides is of great prognostic value.

A special method has lately been advocated by Dr. Gowers. It can be best described by him:

"Begin with doses of two to three drachms of bromide every second or third morning, and increase the dose to four drachms every fourth morning, and six drachms or an ounce every fifth morning. . . . The object is to give the nervous system, as it were, a series of blows with bromide in order to facilitate the occurrence of the condition which bromide produces in patients who are cured of epilepsy by its use. . . . The maximum dose should be reached in two to three weeks, repeated three or four times, and the doses then gradually reduced, so that the whole course lasts six or seven weeks."*

I am sorry to say that a trial of this method upon six patients failed to give as favorable results as the continuous bromide treatment, although the precautions recommended by Dr. Gowers were carefully observed.

I look to the future for the specific for epilepsy. In the present condition of our knowledge I do not believe that we can do more than check the manifestations and the progress of the disease; and my paper is intended simply as a contribution to the rational medicine of the subject.

THE THERAPEUTIC USE OF THE DIGESTIVE FERMENTS.†

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I THINK you will agree with me in the statement that, although the various digestive ferments have been very largely used, it has been with but partial success.

* *Op. cit.*, p. 259.

† An abstract of a paper read before the New Haven Medical Association, June 16, 1884.

In considering the subject, we may very properly ask whether this result is due to inefficiency of the preparations which have been furnished us, or to errors in our methods of administration, or whether we have expected more from their use than is reasonable.

In opening the discussion, I will make no attempt to formulate a reply to these questions, but will call attention to such functions and uses of these ferments as seem to be of therapeutical importance. This can be most readily done by considering them in three divisions of a natural chemical classification:

I. *The Enzymes acting on Starch* are diastase of malt, ptyalin of saliva, and the unnamed diastatic ferment of the pancreatic secretion. The product of the action of these substances was, until recently, considered to be glucose. Musculus and others have shown, however, that very little glucose is formed, but that the starch is for the most part converted into maltose and various dextrins.

It has been assumed, and is so taught in all text-books, that the starches and sugars are absorbed in the form of glucose, and this on no better ground than that the absorbed body reduces cupric hydroxide as does glucose. Some statements on this subject have recently appeared which are of quite a new character. I refer to the publication in the "Chemical News," by Dr. F. W. Pay, of a series of papers on the physiology of the carbohydrates, in which the author shows, by an ingenious method of analysis, that there are agents in the walls of the stomach and intestines which convert glucose and cane-sugar into maltose and dextrins, and, further, that after the ingestion of these sugars no trace of them is to be found in the portal blood, but only maltose and dextrins.

This work has not yet been confirmed, but is interesting as indicating a simpler method of dealing with the carbohydrates than has been supposed to exist.

Of the commercial preparations which we have at our command, certain of the extracts of malt are very active diastatic agents. Much has been promised by the manufacturers of pancreatin, but I think that we shall be disappointed if we rely upon these preparations for this purpose. Thus I found that, judging from the amount of copper hydroxide reduced by the product formed, 1 c. c. of saliva transformed more starch in five minutes than one grain and a half of pancreatin did in two hours. And this was a sample given to me as an active diastatic agent.

To meet, then, an indication for the use of a diastatic ferment, a good extract of malt is at present our only agent.

The liquid, beer-like preparations, of which Hoff's is an example, will not serve for this purpose, as in them the ferment is mostly destroyed in the process of manufacture. The preparations to be used are the concentrated extracts like Trommer's, and maltine, which are solutions of diastase in a thick sirup of maltose, dextrins, and extractives of the grain used. The substances, although in great part fit for immediate absorption, can, of course, amount to but little as food when given in the usual medicinal doses.

From what is known of the conditions in the stomach, I believe that diastase can act with saliva during the first part of gastric digestion. So that it can be administered

immediately after meals, or, better, used not as a medicine, but as an addition to, or seasoning for, the dish of oatmeal, boiled rice and milk, or of gruel. It should be added just before eating, and at a temperature not above what can be borne in the mouth. The taste is quite like that of sorghum syrup, and not disagreeable to most people.

The chief indication which occurs to me for the use of ferments of this class is that of acid eructations following the ingestion of carbohydrates and due to the acetic- and butyric-acid fermentations.

It seems desirable in these cases to hurry the decomposable bodies out of the stomach before these fermentations can be established.

II. *Proteolytic Enzymes*.—There has been, and I think there still is, much confusion in the minds of some physicians and manufacturers regarding the properties and uses of pepsin of the gastric juice and trypsin of the pancreatic secretion.

Following Defresne and earlier experimenters, some of the text-books now in use are not correct on these points, according to the more recent results of Kühne, Chittenden, Langley, Roberts, and others, who have investigated the relations of the ferments to one another, and to acids and alkalies.

The following statements may be easily confirmed: Pepsin is completely destroyed by the action of a free alkali, or alkaline salts, such as sodium carbonate. Trypsin can act in the presence of very dilute acids, but is quickly destroyed by hydrochloric acid of the strength of the gastric juice, this destruction being accelerated if pepsin is also present. These statements concerning trypsin are also true of the animal diastatic ferments. With these facts as a basis, it would seem an easy matter to indicate the best method of administering these substances for medicinal purposes. Such, however, is not the case. It is only recently that we have found a reagent for distinguishing between a free acid and an acid in loose combination with proteids. And we do not know how the formation of these combined acids may have affected our experimental results. Von d. Velden says (*"Zeitsch. f. physiol. Chem.,"* iii, p. 205) that the first appearance of free acid during gastric digestion varies with the nature of the food ingested between 45 m. and 2 h. Uffelmann gives the limits as 45 m. and 1 h. (Maly's *"Thier-Chemie,"* 1880, p. 302). Ewald (*ibid.*, p. 303) denies that the period is so long. If it is of any such considerable length, it is possible that the ferments, which are destroyed by the gastric juice of full acidity, may act to some advantage during this time, as I have said of the diastatic ferments.

If, therefore, pancreatin is to be given immediately after a meal for its effect on proteids, it must be with the understanding that, at the best, the conditions are not so favorable for its action as for that of pepsin, and that it is very doubtful if any considerable part of a dose can pass through the pylorus before sufficient acid is secreted to destroy it.

Some of the preparations to be found in the market are nearly valueless, as a so-called pure pepsin which I found to be almost without action on fibrin. But this is true of many remedies, and is to be avoided by using the goods

of reliable houses. Certainly many of the scale pepsins and pancreatins are very efficient preparations, and likely to become more so from improved manufacturing processes.

The saccharated preparations may, of course, be good, but can not be recommended, as they are liable to falsification, and are very easily prepared extemporaneously if desired.

As we believe that we consult our best interests by prescribing our own mixtures instead of the nostrums of the manufacturers, so it seems to me we should do by avoiding the many digestive compounds which are poured upon the market. Some of them are incompatible mixtures; as, for instance, the liquid preparations which are similar to lactopeptine in the claim that they contain all of the digestive principles. To be complete, as some one has well said, they only require, in addition to the free acid present, also some free alkali. For without it the trypsin and diastatic ferments would be completely destroyed by the pepsin and acid in the time that must elapse between manufacture and consumption. Others are curious examples of polypharmacy, like the one which contains in the dose recommended, besides other things, one fifteenth of a grain of diastase and one fourth of a grain of maltose.

The starch would suffer very little, I fancy, from this amount of ferment. The object of the one fourth of a grain of maltose is difficult to understand when one reflects that one third or more of all the starch ingested is absorbed as maltose. Other examples could be cited, if necessary, to show that there are in the market preparations which are inefficient from lack of active principle and from bad pharmacy, and that they have been largely used. The digestive ferments have never with certainty been prepared in a pure state. Therefore the commercial articles, however good, contain an uncertain but considerable amount of inert matter. Hence, if one of these impure pepsins is given, as I have seen it, in half-grain doses, it seems as if it were expecting too much to look for any marked result.

These substances are used also, I think, in cases where they are not necessary or where they are not the best means to meet the indication. Thus a quantity of pepsin may be put into the hands of a patient with directions to take it when needed. Left in this way, the need is more frequently felt and the person learns to depend upon this artificial help, when, perhaps, the secretions could have been increased by a continued stimulation, such as can be effected by the use of sodium carbonate, before meals, by bitter tonics, alcoholics, and possibly in the case of the pancreas by ether.

The objects to be aimed at in the use of the digestive ferments, it seems to me, are, first, not to supplant but to assist the natural processes, and thus to maintain the proper bodily nourishment while the secretions are being established, if this result can be obtained, as in the case of many convalescents; and, second, to maintain the nutrition during a temporary disability, as in fevers and gastric ulcer.

To meet the first set of cases, pepsin can be given by the mouth after meals in one dose of from five to ten grains, or, as seems more rational, in divided doses, at intervals during digestion, in the form of soluble pills or tablets.

This is the most natural use that can be made of any of the ferments, and seems to be the best means of attacking the proteids within the body. Pepsin can be given with hydrochloric acid if desired, or in powder with sodium bicarbonate, with the expectation of stimulating the secretion of acid. Though owing to the destructive action of the temporarily strong alkaline solution which must exist in the stomach, it is more rational to precede the meal with the carbonate and follow it with the pepsin.

If it is desired to exhibit trypsin in suspected intestinal indigestion, this may be accomplished at the close of gastric digestion, when it should be given well protected by sodium carbonate. Advantage may also be taken in these cases of partially digested milk, or such milk served up in the form of jellies, blanc mange, etc., which can be easily done. I say partially digested, for one pint of milk treated at the temperature of the body with five grains extract of pancreas will acquire as distinctly a bitter taste in a half-hour as will be relished by most convalescents. To meet the indications in the second class of cases mentioned, the digested milk or milk gruel seems to be especially applicable, though the digestion may be continued longer, as from one hour to one hour and a half, since the taste is not so likely to be objected to by a fever patient.

I have only to call attention to the value in these cases of the artificial digestion by trypsin, for the preparation of enemata.

III. *Action of the Enzymes on Fats.*—Fats are doubtless absorbed chiefly in the form of an emulsion. Hence it seems desirable to possess some agent that will further this process. Preparations of pancreas are said to do this, and are frequently used for this purpose. A fresh pancreas, ground up with oil, certainly forms an emulsion which is permanent for some hours. An oil which contains a little free fatty acid readily forms an emulsion with a solution of sodium carbonate.

If the pancreatic juice contains a ferment, as has been claimed, that splits fats into glycerin and free acid, this would readily explain the formation of an emulsion with the alkaline secretion. But Roberts ("On the Digestive Ferments," etc.) states that he has found no acid in mixtures of extract of pancreas and oil short of the time in which the action of bacteria would effect that result. And, further, that he has been unable to make an extract of pancreas that would form an emulsion with fats.

These statements, together with our common experience, would seem to teach that, whatever the action of the secretion, the extracts of pancreas thus far furnished us are, in spite of their claims, quite devoid of any emulsive action.

SOME COMPLICATIONS OF ORDINARY LABOR.

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THESE CASES are presented as illustrating points in the practice of midwifery overlooked or merely mentioned in works on obstetrics, with directions for treatment tending to their successful terminations.

CASE I.—*Premature Rupture of the Membranes, and Ankylosis of the Sacro-coccygeal Articulation.*—Mrs. H. K., aged twenty-six, a native of Ireland, is a stout woman, of good health and appearance. She has never suffered from any menstrual difficulty. Ceased menstruating for the first time about the beginning of December, and expected to be confined early in the September following. Enjoyed excellent health, and gained flesh during pregnancy.

About noon of the 31st of August I was called to see her on account of her having passed a large quantity of whitish fluid *per vaginam*, about 10 A. M., without any warning or pain before or after its occurrence. At the time of my visit she was discharging small quantities at intervals. I learned that she had undergone considerable excitement and exertion during the previous night, having had to ascend and descend the numerous flights of stairs in a high tenement-house, where she lived on the top floor. Examination *per vaginam* revealed the cervix uteri soft and dilated to the size of a silver half-dollar, and the finger came immediately in contact with the head in the left occipito-iliac anterior position. Fœtal heart heard in the left iliac region. Directed rest in bed and quietness.

I was again called to her at 11 P. M. of the same day. Learned that she had commenced having pains in her back about 6 P. M., and at the time of my arrival she was having good uterine contractions at intervals. Examination revealed the head flexed, descended, and almost wholly rotated. In withdrawing my finger, I recognized a bony prominence just beneath the posterior vaginal wall, a short distance in front of the advancing head. This I found to be the coccyx firmly ankylosed to the sacrum, at an angle which would impede the natural and early expulsion of the child by diminishing the antero-posterior diameter of the inferior strait.

The labor progressed satisfactorily, the head rotating and being forced down to the prominence formed by the coccyx with each wave of contraction, till finally it became firmly impacted in the outlet of the pelvis. When this stage of affairs was reached, and I found no further advance was made, notwithstanding good uterine contractions, with the assistance of my friend Dr. Hathaway the forceps was applied and the head readily extracted. After removing the forceps, a few pains delivered her of a large-sized, live female child. The placenta was readily extracted. The perineum having been lacerated, the wound was cleansed and sutured. She had no trouble of any kind during her lying-in, and the perineal wound was all united when I ceased attending her two weeks later. Her subsequent labors have each time necessitated a similar treatment.

The two points to which I will draw attention in the above-recorded case are premature rupture of the membranes and sacro-coccygeal ankylosis.

Premature rupture of the membranes is usually the result of a combination of two or more of the following conditions: Abnormal thinness of the membranes; or excess in quantity of the liquor amnii, with a sudden and forcible entrance of the head into the excavation of the pelvis; or the occurrence of painless contractions due to exertion or injury of various kinds; and meddlesome or criminal midwifery. It may occur as long as four or five days previous to the commencement of labor, or only after the first few pains, before dilatation of the cervix is complete, and is to be diagnosticated from a somewhat similar condition known as hydrorrhœa. This is accomplished with certainty only by a physical examination, when in a case of ruptured membranes the finger will reveal absence of fluctuation

and ballottement within the uterus and come directly in contact with the head through a slightly dilated cervix; whereas in hydrorrhœa the os will be undilated, the cervix of normal length, and fluctuation and ballottement obtained. Another element in the diagnosis will be the period of gestation at which the woman has arrived. If the discharge takes place close upon her expected accouchement, it will more probably be due to rupture of the membranes, whereas hydrorrhœa occurs most frequently during the period of gestation between the fourth and seventh months. In both conditions the proper course of treatment to pursue is rest of every description.

I have met this condition of premature rupture of the membranes chiefly in primiparæ, and the cases have invariably presented some difficulty, so that I am guarded as to the prognosis, and prepare to meet complications in such instances. A complication which may occur with premature rupture of the membranes, especially in cases of distorted pelvis and abnormal presentations, is prolapse of the funis. This is to be borne in mind, sought for, and proper treatment instituted for its relief.

Another result which may follow, and has been produced by the same accident, is hæmorrhage from within the uterus. This will cause grave anxiety, and calls for active treatment, which is fully given in the various books and is not within the scope of this paper.

Ankylosis of the sacro-coccygeal articulation in women is a condition found to exist in a certain proportion of those who have passed the period of adolescence, usually after twenty-five years of age without child-bearing, and in consequence of natural or diseased processes. It may be partial or complete as regards the number of pieces of bones involved and fibrous or bony in its nature, and is most readily felt with the finger in the rectum. Not in all cases does the angle formed by the coccyx offer any interference with the natural mechanism of labor, but in some few cases the bone is turned so acutely forward and so firmly fastened as to lessen the antero-posterior diameter of the inferior strait and cause consequent impaction of the head in the outlet of the pelvis. This necessitates either a fracture of the (now one) bone, allowing the head to pass, or the assistance rendered by the forceps in compressing and molding the head so that it will pass the obstruction. Of these two modes of treatment, the former is the one advocated by all writers, but one which I have been unable to accomplish, and have therefore resorted to the latter, which I have found, in the three cases of this nature I have met with thus far, to be an easy, safe, and rapid one. The former method may succeed in cases of partial or fibrous ankylosis which present only a slight obstacle, and where nature will generally complete the labor unaided. This deformity in itself never reaches such an extent as to require any other operative interference.

CASE II.—*Shortness and Rupture of the Funis*.—Mrs. A. T., Italian, aged twenty-three, is a robust, healthy woman, pregnant for the first time. Has enjoyed good health during gestation.

About noon she first felt the pains of commencing labor. At 8.30 p. m., when I saw her, she was walking about, suf-

fering from pains in the back and abdomen, recurring every few minutes. On examination, the finger revealed the soft parts dilatable, with the os open to the size of a fifty-cent piece. Membranes not ruptured. Head small, and presenting in the left occipito-anterior position. Pelvis of normal size. At 9 p. m. the membranes ruptured. By 11 p. m. there had been but little advance, with the pains becoming of short duration and slight effect, and recurring at long intervals. Finally, the head entered the excavation of the pelvis. During all this time, and subsequently till delivery was accomplished, she was continually desiring to sit up, and did not aid herself at all with bearing-down efforts, but complained of a severe pain in the lower part of her abdomen, even during the intervals between the contractions. At 1.30 a. m.—the head presenting at the vulva, and the pains still failing to appear in sufficient force, duration, and frequency, and, on their subsiding, the head receding as much as it had advanced, notwithstanding the aid I rendered by external and internal manipulations—I gave a full dose of ergot. This had the desired effect, so that, with the assistance I rendered, she was delivered of a small, live male child at 2 a. m. I had previously ascertained that the cord did not encircle the child's neck, but in the delivery it was so short that it broke midway in its length ere allowing separation of the child from its mother, and bled profusely from the fetal extremity. It was necessary to extract the placenta manually, as it was for a small extent adherent to the anterior wall of the uterus. The exact length of this short cord I unfortunately forgot to note at the time and will not guess at it now. Nothing worthy of note occurred during her lying-in.

The cause of the protraction in this case became perfectly apparent at the completion of the labor, and confirmed a suspicion I had formed as to its nature—viz.: that some condition within the uterus was, so to speak, holding the child back, the cord, of course, being the most natural one, and which I at first expected to find coiled one or more times around some portion of the child, thus artificially but practically shortening it, which is a condition more commonly met with, and giving rise very often to similar symptoms. Thus, while this is the only case of decidedly short funis I have met with, I have had the proportion of one coiled funis to every four cases of midwifery that have fallen to my lot, in half of which number ante-natal symptoms pointed to that fact. These symptoms, which were well portrayed in my case—the constant pain in the uterus which is complained of by the patient, and can be differentiated from the other pains attending the parturient process; constant desire to maintain a sitting posture; absence of all desire to assist nature with bearing-down efforts; advance and recession of the head till it becomes stationary; peculiarity of the contractions, becoming short and inefficient; with no other obstacle to a quick and easy delivery—rendered the diagnosis easy by both direct evidence and exclusion. Other symptoms which may be present are: indentation of the uterine wall at the insertion of the placenta, due to traction; convulsive movements of the child and appearance of blood in the discharges at a late period, from laceration of the cord or separation of the placenta. By physical examination we may feel either a tense uncoiled cord, or a portion of it coiled around some part of the fetus, usually the neck.

The condition shown by this train of symptoms may

result simply in a protracted labor that otherwise would have been rapid; strangulation of the part of the child that the cord encircles; rupture of the cord; or premature separation of the placenta, allowing of a hæmorrhage and inversion of the uterus.

The different plans of treatment advised for this complication are: the efforts of nature, assisted by position, the woman squatting, sitting, or in the genu-pectoral posture; external abdominal compression; looping down the cord over the head; allowing delivery through the coils; assistance rendered through the rectum; ergot, the forceps, and severance of the cord.

In the majority of cases the efforts of nature, assisted by position, manipulation, and sometimes ergot, will accomplish a successful result, as in the above-recorded case; but in two cases of coiled funis I have failed by these methods, and have had to resort to the forceps for accomplishing the delivery, each time with success. The necessity for a cutting operation will be very rarely called for, judging by the scarcity of reported instances, and only in cases of imminent danger after the former methods have failed, as it will be found a difficult operation, liable to be attended with injury to both mother and child.

I have had another case of rupture of the cord near the fetal extremity during a precipitate labor, the child falling to the floor, while the woman was in the erect position, before I was in attendance, but causing no harm.

CASE III.—*Puerperal Malarial Fever*.—Mrs. H., American, aged twenty-three; first pregnancy. Is a slight, delicate woman, with a phthisical history in maternal ancestry for generations back. She ceased menstruating early in August, and expected delivery early in May. Throughout gestation vomited constantly, and suffered considerably from attacks of sick headache that have been a source of great trouble to her for years. Has become emaciated and anemic, with slight cough. Urine: specific gravity, 1.015; acid, eight per cent. albumin, quantity large. Living in an intensely malarial neighborhood on the east side of this city. She had paroxysms of intermittent at six and three weeks previous to labor setting in. Quinine was prescribed, but taken irregularly.

May 4th.—Labor began about 10 p. m. last night. At 7 a. m. this morning pains expulsive, strong, and frequent. Head in the left occipito-anterior position. Membranes ruptured spontaneously. At 10 a. m. she was delivered of a live female child, weighing six pounds. Placenta readily extracted. Afternoon temperature, 102.5° F.; pulse, 106 (see chart).

5th.—Recurrence of fever in the afternoon; also on the 6th, though not so high. Ordered grs. v quinine every six hours. Otherwise feeling comfortable.

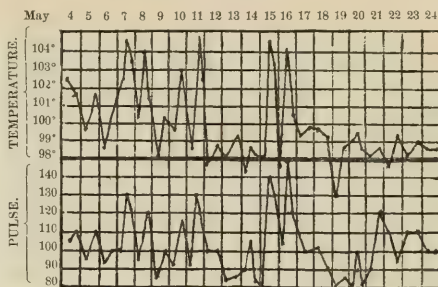
7th.—Severe and prolonged rigor this morning, followed by high fever and pulse. Five stools, due to magnesia taken early in the morning. Appearance of milk to-day. To take half a drachm of quinine in twenty-four hours.

8th and 9th.—Cinchonized and nauseated; otherwise feeling well, and taking nourishment.

10th.—High temperature to-night, with pain in left side of chest, and dyspnoea. Careful physical examination negative. Later, sweats profusely. Ice to head, quinine and stimulants.

11th.—Felt cold all the morning; also weak, tired, and sore. Nauseated, and vomiting. Kept cinchonized by 15 grs. quinine every six hours (or a drachm in the twenty-four) *per rectum*. Milk punch *ad libitum*.

13th.—Feeling better. No fever. Respiration 20. Professor Thomson in consultation. Symptoms pronounced to be due solely to malarial poisoning, with no pelvic or parenchymatous trouble.



14th.—Slept well. Sat up out of bed. Little appetite. No fever. Quinine, a drachm in twenty-four hours *per rectum*.

15th.—Another severe paroxysm of cold stage; fever and sweating, with headache, nausea, vomiting, and great prostration.

16th.—Repetition of yesterday's events. Taking 75 grs. of quinine in twenty-four hours *per rectum*, with nourishment and stimulants. Continually vomiting. Quinine increased to 120 grs. in twenty-four hours (20 grs. every four hours).

17th.—Only a slight rise in the temperature to-day.

18th.—Repeated large doses of quinine to-day, and consequently in the evening our patient became so greatly prostrated that we stopped the quinine and administered enemata of brandy and ammonia. These measures brought on a favorable reaction, so that by the 20th our patient was feeling bright and lively, with pulse and temperature normal, good appetite, no vomiting, and taking no medicine. From this date on improvement continued, and convalescence progressed to restored health. Ten grains of quinine were administered by enema, night and morning, to prevent any relapse, for a short time after permanent improvement began.

The two interesting points in the above-narrated case are as regards diagnosis and treatment. Regarding the first point I will premise by saying that only symptoms that were actually present are mentioned. All other symptoms and physical signs were carefully sought after by my friend Dr. W. A. James, who was associated with me throughout the management of the case, Professor Thomson, and myself, so as certainly to exclude septicæmia, puerperal fever, inflammatory fever, tuberculosis, and all other complications, no matter how remote, of the puerperium. At no time could any abnormal condition be made out regarding the generative organs or the lochia, all behaving as they would under ordinary circumstances. Finally, when one views the history previous to labor and the subsequent symptoms presented, no other diagnosis can be reached. The treatment may be said to have been heroic, but was urgently called for, as on the 15th it was thought the termination of the case would be fatal, and the experience of others with this disease, which we diligently examined, taught us was necessary. Warburg's tincture was administered, but not retained, and consequently had to be abandoned, and we were thrown back exclusively to quinine as the only weapon to combat this disease with.

THE LESSER DEGREES OF CHRONIC PELVIC INFLAMMATION IN WOMEN.*

By FRANK P. FOSTER, M.D.

By the expression "lesser degrees" I mean to imply those forms of the affection in which no history of an acute beginning can be elicited, or any sign that there has ever been a tendency to suppuration, and in which there is no bulky exudate. Negative as the terms are by which such cases are to be distinguished from those of which the immediate symptoms are ordinarily graver, and the physical signs more pronounced, the cases themselves are by no means of trifling significance; they are exceedingly common in occurrence, they are apt to be followed by consequences which produce serious impairment of the health, and they constitute an important element to be considered when we have to decide upon measures of treatment. A few words, therefore, with regard to each of these three aspects of moderate degrees of chronic pelvic inflammation in women may serve to call forth the discussion which this short paper is chiefly intended to give rise to.

We all know the frequency with which evidences of pleurisy are found in the bodies of persons who, during life, never suspected themselves to be the subjects of any thoracic trouble whatever. Perhaps it would be too strong a statement to say that like affections of the pelvic peritonæum, or of the cellular tissue between its folds, were equally common, or that they so often passed unrecognized. I think, however, that this much may be said: that they are by far the most frequent of all the diseases peculiar to women, occupying the position in gynecology that the various forms of eczema hold in dermatology. At least, that is the conviction I have been forced to, without the opportunity of supplementing clinical study by post-mortem investigation. If those of you who have devoted much attention to the practical study of general pathology have been led to a different conclusion, I trust that you will state the fact, for it will serve to correct the error into which it will show me to have fallen. It will be understood, of course, that I refer to women who have not only reached adult life, but passed a considerable portion of the usual child-bearing period.

Assuming, as you will allow me to assume for the time being, that I have truthfully stated the frequency of the affections under consideration, it becomes a matter of importance to inquire into the causes of this frequency. The periodical turgescence of the ovaries and the uterus inseparable from the menstrual function suggests itself at the outset, as, indeed, it has suggested itself from time immemorial, as an ætiological factor. The idea is obvious and plausible, and it can not be denied that obviousness and plausibility often give the clew to facts. On the other hand, menstruation is a natural process, and, while it is true that in many instances our organs perform their functions at the risk of injury to their integrity, if we allow a preponderating sig-

nificance to the monthly pelvic congestion of menstruation, we must admit that that function is exceptionally prone to be followed by damage to the parts concerned—an admission which, to be of any great force, ought to be sustained by more exact data than those now at our command. Without specific facts, however, it would be quite as irrational to deny the morbid action of menstrual congestion as to cling to it to the exclusion of more precise ideas. But perhaps the present state of our knowledge warrants some such statement as this: that menstrual congestion is probably insufficient of itself to initiate a morbid process, although abundantly capable, by its repeated occurrence, of stimulating and developing diseased conditions which, but for some perturbation of the sort, would generally tend to disappear spontaneously. In other words, and limiting the statement to normal menstruation—to the element of congestion—the performance of that function is not a cause of disease, strictly speaking. Any marked deviation from the normal course of menstruation presupposes some antecedent disease, and, that granted, the question of the primary ætiological significance of menstruation is answered.

Abnormalities of gestation and parturition, being in themselves pathological, we can more readily admit to be capable of giving rise to positive disease of the pelvic structures. To enter upon a discussion of their importance, however, would be to go over a field familiar to you all. I shall, therefore, content myself with suggesting one or two other possible sources of pelvic inflammatory disease that have come to my notice. In a certain proportion of cases—not, I must admit, a large proportion—a coincidence may be traced between the first manifestations of the disease and an attack of some intestinal trouble of an inflammatory nature. In quite a number of instances I have thought there was reason to associate an attack of dysentery with the production of the sort of disease under consideration. In still others, fewer in number, typhoid fever has seemed to play the same part. Doubtless the connection between intestinal affections and pelvic inflammation is no new notion, but it may be, nevertheless, that it is not borne in mind so much as the facts would seem to call for.

Leaving the matter of ætiology, the pathogenetic importance of slight forms of pelvic inflammation is to be considered. It is my decided conviction that this feature of these affections is underrated by many gynecological writers. Indeed, with the exception of Dr. Emmet in this country and B. S. Schultze in Germany, I know of no author who gives it what I consider due prominence. Chapter after chapter is devoted to displacements of the uterus, to flexions of that organ, to dysmenorrhœa, to endometritis, and even to sterility, while the affections now under consideration—in my opinion, the most common beginning of them all—are treated as of minor consequence.

Not to take up your time with an enumeration of the various disorders ordinarily called "uterine" which may be due to antecedent non-visceral inflammation, I will only call your attention to the capabilities of contracting layers and small masses of exudate in distorting the uterus, in binding it in abnormal attitudes and situations, and in preventing its expansion under the engorgement of menstruation; in

* Read before the New York Clinical Society, January 25, 1884.

producing stenosis of the Fallopian tubes; in crippling the ovary; in destroying the free expansion and contraction of the bladder; and in interfering with the return of the venous blood from all these organs. This one element seems to me ample to account for the great majority of cases of dysmenorrhœa, sterility, ovarian pain, profuse menstruation, and leucorrhœa that make up so large a share of the every-day practice of gynecology.

It is not my purpose in this paper to enter upon the consideration of specific measures of treatment, but, if the foregoing views are of any value, they should not fail to exert a far-reaching influence upon the treatment of many of the diseases of the sexual apparatus not generally suspected to be connected with extra-uterine inflammation and its products. Excluding the neoplasms that threaten life, I should say that, whatever abnormal conditions may be found affecting the organs in question, so long as chronic extra-uterine inflammation co-exists, it should be looked upon as the most important feature in the case, and as the one to which treatment ought chiefly to be directed. So far as my own experience goes, I have met with far more success by following this course than by seeking to remedy the more obvious derangements, whether versions, flexions, hæmorrhages, discharges, stenoses, or any of the other conditions that are usually the direct source of complaint. If I stood altogether alone in these views, I should hesitate to put them forward as of any importance, but I may be permitted to say that for several years past Dr. Emmet has virtually given up intra-uterine medication in the treatment of endometritis; operations designed to enlarge and straighten the uterine canal are falling into disuse; the flexion theory of dysmenorrhœa is drawing to its downfall; and it is beginning to be felt that the curette is not all-powerful.

But it is not alone the useless from which these considerations should warn us to desist; some of the therapeutic measures that have been much resorted to are injurious, especially when there is a tendency for the slumbering inflammation of the serous and cellular structures of the pelvis to break out into an acute affection. I will mention only that one of them which is probably considered by many the one least likely to cause trouble—the operation of replacing the uterus by means of an instrument. I doubt if there are many who will agree with me in the statement that this procedure is unwarrantable under all circumstances, but that is my firm conviction. The leverage afforded by an instrument like the sound passed into the uterus, to a certain extent unguided and unrestrained by the sense of touch, is certainly capable of doing much damage. The danger would not be so great if the instrument were used only by those who appreciate the importance of extra-uterine inflammation, and are capable of recognizing its existence in the class of cases referred to, but there seems to be a mania for instrumental interference among those whose knowledge of the pathology and diagnosis of pelvic diseases is very limited. It is to be hoped that this state of things will pass away when gynecology takes its place on the plane reached by the other practical branches of medicine.

Book Notices.

The Diagnosis and Treatment of Diseases of the Ear. By OREN D. POMEROY, M. D., Surgeon to the Manhattan Eye and Ear Hospital, etc. With one hundred illustrations. New York: Berningham & Co., 1883. Pp. 392. [Price, \$3.]

This book is expressly designed for the general practitioner, and hence the subject is discussed from the practical rather than from the scientific standpoint. Allowing for that fact, we still think it is to be regretted that some account of the anatomy and physiology of the organ of hearing has not been included.

The work embraces six main divisions, which treat of the different diseases of the various parts of the auditory apparatus, and three additional ones, which describe the instruments used in examining and treating the ear, the throat, and the nares, with hints as to methods of examination and as to artificial aids to hearing. The first of the main divisions treats of the diseases of the auricle, and considerable space is given to the subject of perichondritis auriculæ and its treatment, the author advising against the use of the knife unless fluctuation is decided and there appears to be a pus cavity of considerable size. The next section treats of diseases of the external auditory canal, and explicit and sensible directions are given for the removal of foreign bodies from the canal. Considerable attention is given to the management of impacted cerumen and to its consequences. The author highly recommends the flanged ear-syringe devised by himself, not only for removing foreign bodies, but also in the treatment of purulent inflammations of the middle ear. The section on exostoses and hyperostoses of the external canal is good, especially in regard to operative treatment.

The sections on the diseases of the middle ear and the mastoid region are full and well written, the author's views being mainly in accord with those of most modern otologists, and some good points are made concerning the ætiology of catarrhal affections and their combined constitutional and local treatment. Dr. Pomeroy prefers the syringe in the treatment of chronic purulent inflammation of the middle ear, although he admits that the "dry treatment" sometimes gives good results. He recommends the employment of the faucal catheter devised by himself, both as a means of inflation and for the purpose of making astringent and caustic applications to the naso-pharynx and to the mouth of the Eustachian tube. He prefers the forceps to the snare for the removal of aural polypi. In the treatment of mastoid affections, he gives the preference to the use of Buck's drills over all other means of opening the mastoid process. Malignant and syphilitic disease of the ear and boiler-makers' deafness are discussed in short sections, and a number of interesting cases are reported, showing the course of each disease and the effects of treatment. There is a brief but interesting section on disease of the labyrinth dependent on middle-ear disease, with another on disease of the acoustic nerve and labyrinth dependent on affections of the brain and its membranes.

The work is perhaps well enough illustrated on the whole, but a number of the woodcuts are bad and entirely unworthy of the subject-matter of the book, especially those representing pathological appearances. The student and the general practitioner may safely refer to Dr. Pomeroy's work as a trustworthy guide to the diagnosis and treatment of diseases of the ear, drawn as it has been from the personal observation and experience of such a well-known and careful observer as the author is recognized to be.

The Lettsoman Lectures on the Treatment of some of the Forms of Valvular Disease of the Heart. Delivered before the Medical Society of London. By A. ERNEST SANSON, M. D. Lond., F. R. C. P., Physician to the London Hospital, etc. Philadelphia: P. Blakiston, Son & Co., 1883. Pp. 93. [Price, \$1.25.]

THE expectations entertained by those who have read Dr. Sansom's previous writings on diseases of the heart will not be disappointed by this little book. The first of the three lectures is devoted to the general consideration of endocarditis, its morbid anatomy, and the present methods of treating it. The second is given to mitral regurgitation. The author seems to have great confidence in remedial measures for the relief of this condition, and enumerates drugs in the order of their usefulness as follows: Digitalis, belladonna, casca, caffeine, *Convallaria maialis*, morphine, and alkalies. He gives more prominence to morphine and belladonna than is usual with authors, and in this we are heartily in accord with him, for, when judiciously given, there are no better remedies for certain forms of heart disease.

The third lecture deals with the diagnosis and treatment of mitral stenosis. Digitalis the author thinks of much less use in this condition than in regurgitation, and he relies more on caffeine and convallaria. His suggestions as to treatment are admirable in the main, but it seems to us that he has not laid sufficient stress on the management of the remote effects of cardiac disease, especially those on the gastro-intestinal tract in mitral stenosis. To be sure, these matters do not belong directly to his subject, but indirectly they are of great importance. We often fail to produce on the heart certain effects which the drugs employed ought to cause, simply because we have overlooked some abnormal condition of the stomach.

We quite agree with Dr. Sansom that venesection may be useful in certain conditions of cardiac disease, and consider the suggestion a timely one. Every general practitioner will find it profitable to read this little book.

BOOKS AND PAMPHLETS RECEIVED.

Student's Manual of Electro-Therapeutics, embodying Lectures delivered in the Course on Therapeutics at the Woman's Medical College of the New York Infirmary. By R. W. AMIDON, A. M., M. D., etc. New York: G. P. Putnam's Sons, 1884. Pp. v-93.

The Extra Pharmacopœia of Unofficial Drugs, etc. By WILLIAM MARTINDALE, F. C. S., etc., and W. WYNN WESTCOTT, M. B. Lond., etc. Third Edition. London: H. K. Lewis, 1884. Pp. vi-330.

Hay Fever; its Ætiology and Treatment. A Lecture delivered at the London Hospital Medical College. By MORELL MACKENZIE, M. D. Lond., Lecturer on Diseases of the Throat, and formerly Physician to the Hospital, etc. London: J. & A. Churchill, 1884. Pp. 24. [Reprint from the "British Medical Journal." Price, 1s.]

Notes on Labor in Central Africa. By ROBERT W. FELKIN, F. R. S. E., F. R. G. S., etc. [Reprint from the "Edinburgh Medical Journal."]

A Paper on Extirpation of the Entire Tongue for Cancerous Affections. Read by BASIL NORRIS, M. D., Surgeon, U. S. A., before the American Surgical Association, Washington, D. C., 1884.

Annual Announcement of Trinity Medical School, Toronto, Session, 1884-'85.

The Cholera and Science. [Reprints from "Science."]

Treasury Department. Report on the Internal Commerce of the United States. By JOSEPH NIMMO, JR., Chief of the Bureau of Statistics. For the Fiscal Year 1881-'82. Commerce

and Navigation. Washington: Government Printing Office, 1884. Pp. vii-39.

Annual Announcement of the American Veterinary College. Session of 1884-'85.

The Treatment of Backward Displacements of the Uterus and of Prolapsus Uteri by the New Method of Shortening the Round Ligaments. By WILLIAM ALEXANDER, M. D., etc., Visiting Surgeon to the Liverpool Parish Infirmary. London: J. & A. Churchill, 1884. Pp. 71.

Health Hints for Travelers. By JOHN C. SUNDBERG, M. D. Philadelphia: D. G. Brinton, 1884. Pp. 61.

Minutes of the State Medical Society of Arkansas, at its Ninth Annual Session.

London Water Supply. Report, etc., No. xxxix.

Address on Practical Medicine. By JOHN V. SHOEMAKER, A. M., M. D., Chairman of the Section of Practice, etc. Delivered before the American Medical Association, at the Thirty-fourth Annual Meeting, held at Washington, D. C., May 7, 1884. Philadelphia, 1884.

On Paroxysmal Fever—not Malarial. By J. H. MUSSEY, M. D., etc. [Reprint from the "Proceedings of the Philadelphia County Medical Society."]

A Modification of the Sphygmograph, being a Change in the Base of the Instrument of POND. By J. H. MUSSEY, M. D., etc. [Reprint from the "Medical and Surgical Reporter."]

Nineteenth Annual Announcement of the Medical Department of the Willamette University, Portland, Oregon. Session of 1884-'85.

Sixth Annual Announcement of the Fort Wayne College of Medicine. Session of 1884-'85.

The Essentials of Anatomy, Physiology, and Hygiene. A Text-Book for Schools and Academies. By ROGER S. TRACY, M. D., Sanitary Inspector of the New York City Health Department, etc. New York: D. Appleton & Co., 1884. Pp. xii-299, [Appletons' Science Text-Books.]

The Laws of Health. Physiology, Hygiene, Stimulants. Narcotics. For Educational Institutions and General Readers. Copiously Illustrated. By JOSEPH C. HUTCHISON, M. D., LL. D., etc. New York: Clark & Maynard. Pp. 8-11 to 228, inclusive.

Transactions of the Medical Society of the State of Tennessee, Fifty-first Annual Meeting, 1884.

Clinical Demonstrations on Ophthalmic Subjects. By J. R. WOLFE, M. D., F. R. C. S. E., Senior Ophthalmic Surgeon to the Glasgow Ophthalmic Institution, etc. With Illustrations. London: J. & A. Churchill, 1884. Pp. 54.

London Water Supply. Report, etc., No. xl.

Announcement of the Fiftieth Regular Session of the Cincinnati College of Medicine and Surgery, 1884-'85.

Thirty-fifth Annual Announcement of the Woman's Medical College of Pennsylvania, Session of 1884-'85.

Representative London Journalists. (Portraits, etc.) New York: R. Hoe & Co.

Female Education from a Physiological Point of View. A Lecture introductory to the Summer Course on Obstetric Medicine, 1884. By JOHN THORBURN, M. D., Professor of Obstetric Medicine, Owens College and Victoria University, etc. Manchester: J. E. Cornish, 1884. Pp. 23. [Price, 6d.]

Medical Advice to Young Men. By C. A. BRYCE, M. D., Richmond, Va. Richmond, 1883. [Price, 25c.]

The New York Post-Graduate Medical School and Hospital. Announcement of the Third Year—Sessions of 1884-'85.

Cincinnati College of Medicine and Surgery. Announcement, Fiftieth Regular Session, 1884-'85.

Official Report of the Relief furnished to the Ohio River Flood Sufferers, etc. By R. P. M. AMES, A. M., M. D., Assistant Surgeon, U. S. Marine Hospital Service.

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CIVIL PRACTICE BY ARMY SURGEONS.

IN our issue for June 14th we made a few remarks of a general nature on this subject, the occasion of our doing so being a newspaper attack on the medical officer stationed at Fort Trumbull, in Connecticut. The attack was petty and narrow in the extreme. In so far as it had any point worth noticing, it was the assumption, in effect, that it was an offense, or at least an act of injustice, for army surgeons to practice medicine among civilians; but this was backed up by an unspeakably vulgar appeal to the dislike entertained by mean and ignorant people toward persons who draw pay from the Government, the writer even going so far as to descant upon the munificence of the army surgeon's emoluments. All this was, of course, the veriest demagogism, and we declined, and still decline, to entertain the thought of its having been inspired by the medical profession of New London.

We have lately received an anonymous letter, apparently sent with the idea that we would publish it, suggesting that our remarks were unjust to the New London physicians, and criticising the course alleged to have been followed by the medical officer at Fort Trumbull. The letter can not appear in our columns, except with its author's signature, for we think it unbecoming to publish injurious criticisms of individuals anonymously; besides that, we never publish a letter of any sort unless we know the writer's name and address. We have, therefore, at present nothing further to say of the New London affair than that, if it is to be made the subject of controversy, the discussion had better be carried on in the recognized channels of professional opinion than in the local newspapers.

As to the general question, divested of casual complications, it seems to us that there are only two objections that can possibly be brought against the propriety of private practice on the part of army medical officers. One of them concerns the relations of those officers to the Government, and, unless we are mistaken, the War Department has rendered decisions to the effect that the practice is allowable. Our impression is, too, that the Department feels it to be not only allowable but desirable in the interest of the service, and for that feeling there appears to be ample ground. In the first place, the prospect of an income in addition to the official pay undoubtedly serves to attract men to the service who would otherwise feel the sacrifice too great for them to make. In the second place, the mere fact of being to a certain extent engaged in general practice makes a man a better medical officer—it lifts him out of the grooves of routine, sharpens his wits by contact with his civilian *confrères*, and inspires his military practice with an interest

quite above and beyond the mere idea of performing his official duty in such a way as not to incur the censure of his superiors.

The other of the two conceivable objections has reference to the medical officer's duty toward his professional brethren in civil life. Any consideration of this aspect of the matter by interested persons is likely to be complicated by side-issues, and it may certainly be conceded that there is often as much in the way in which a thing is done as in the nature of the act itself. But into these casual details it has not been our purpose to enter. The broad question is one that has exercised the profession at various times, and is even now the subject of lively discussion in France. Our own position is that no argument above the level of trades-unionism can be brought forward in support of the objection.

No doubt competition with an advantage is sometimes a hardship, but it is not necessarily an injustice, and, practically, the particular hardship encountered in the competition of a fellow-practitioner with the advantage of an official position of honor, and one that guarantees his capability to the public, must be much mitigated by the counter-advantage of permanent residence. We can scarcely suppose that the better-paying class of citizens often choose a medical officer of the army for their family physician, except on the outposts of civilization, for they are not given to changing their physicians on slight occasion, and they are aware that an army surgeon is liable to be ordered away at any time. The case is somewhat different, of course, in the city of Washington, where medical officers of high rank, have positions that may be called practically permanent, but it should be borne in mind that these few men have attained to their positions only after long terms of service, as a rule, and surely the reward of their maturer years is not grudged them by their brethren in civil life.

CHRONIC ALCOHOL POISONING.

Second Article.

THE report of which we began a summary last week deals next with the effects of alcohol on the nervous system in the animals that were subjected to experiment. The phenomena of excitement were not observed, but, so soon as the hogs had swallowed their spirituous allowance, they lapsed into a state of torpor which lasted for several hours. After the experiments had been continued a number of months, muscular tremors were produced, with weakness of the limbs, particularly the posterior extremities. A slight push was sufficient to throw the animals to the ground, and, when they were once down, it was with great difficulty that they were able to rise to their feet again. No lesions of the nervous centers were discovered post mortem. M. Dujardin-Beaumetz thinks that the differences in the psychological phenomena of alcoholism in the hog and in man are to be imputed to the small size of the brain in the former. In the hog, alcoholic poisoning produces somnolence, prostration, and hebetude, but there is nothing of the delirium and fury of human drunkenness.

With regard to the effects of chronic alcoholism on nutrition, the French experimenters found that the animals continued to

grow fat under their daily rations of spirits; but, whenever intestinal troubles supervened, especially if they persisted for some length of time, the appetite declined and emaciation ensued. After two years of subjection to the alcoholic regimen, all the animals became lean and continued to lose flesh, although a sufficiency of food was allowed them. Their muscular tissue did not present a healthy appearance, interstitial hemorrhages were noted in a number of them, and all the carcasses were condemned by the official inspectors.

As for the influence exerted by the different alcohols, it was found, as had been determined by previous experimenters, that the most toxic and deleterious of the ardent spirits employed were those that contained certain other alcohols besides ethyl alcohol. The purified products of the distillation of wine were by far the least noxious, both in immediate and in remote effects. As is well known, the alcohol of such liquors is chiefly that of the ethyl series. The presence of certain quantities of propyl, amanthyl, capryl, and amyl alcohols in the spirits ordinarily used accounts for their great intoxicating power as compared with brandy. It is especially the spirits obtained from grains, beets, and potatoes that contain the most amyl, butyl, and propyl alcohols, and drunkenness is at its maximum in those countries, such as the Scandinavian, where those products are most used. Those animals to which the impure, coarse, unrectified products of the still were given showed the earliest, the most protracted, and the severest interference with their organs and functions. A hog that had unrectified grain spirit succumbed in less than two years; one that got beet whisky had pronounced congestion of the digestive tube, the liver, and the lungs, and atheroma of the aorta; and one that took potato spirit presented hepatic congestion of the most decided grade. On the contrary, those that were dosed with purified ethyl alcohol, potato spirit ten times rectified, or other rectified alcohols, showed few lesions or none at all—a fact in striking accord with the national experience alluded to. The hogs that were given essence of absinth showed a peculiar nervous excitation, tremors of the limbs, contractures, and cutaneous hyperæsthesia—but a slight touch was needed to provoke violent spasms of the limbs.

The results of these thirty or more months' careful experiment should help to a more scientific understanding of the subject of chronic alcohol poisoning, and among the practical hints to be drawn from them is the question whether it would not be well for the State to offer some substantial encouragement to the better rectification and purification of the liquors of commerce. Certainly something might be done, even in this way, to stay the evils of intemperance, which governments have sought—confessedly, with scant success—to arrest by prohibitory legislation.

The crude products of many hundreds of distilleries are being distributed over the land, loaded with fusel oil and other fiery and destructive substances, and are working widespread mischief and devastation.

MINOR PARAGRAPHS.

THE GROSS PROFESSORSHIP OF PATHOLOGICAL ANATOMY.

It is gratifying to observe the progress already made in the work of raising an endowment fund for the establishment of the memorial professorship to be designated in honor of the late Professor Gross. We wish the Alumni Association of the Jefferson Medical College all possible success in their praiseworthy undertaking, and we are glad to see abundant indications that the work of contributing to the fund will not be confined to the graduates of the school. It is in the highest degree fitting that they should have proposed the movement, and that they should assume its management, but the whole profession in America should esteem it a privilege to take part in furnishing the means. Contributions, which may be sent to Dr. R. J. Dunglison, Lock-box 1,274, Philadelphia, will be acknowledged in the "Medical News," of that city.

THE OHIO RIVER FLOOD SUFFERERS.

WE are indebted to Dr. R. P. M. Ames, an officer of the Marine Hospital Service, stationed at Evansville, Indiana, for a copy of the official report made by him of the relief measures afforded on two trips of the relief boat Carrie Caldwell. Apart from the sanitary aspects of such calamities as overtook the people in the district affected by the flood, the report of Dr. Ames affords gratifying evidence of the diverse ways in which the Marine Hospital Service extends its beneficent action under its present management.

NEWS ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending July 1, 1884:

DISEASES.	Week ending June 24.		Week ending July 1.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid	6	2	4	0
Typhoid Fever	12	5	16	4
Scarlet Fever	54	16	38	15
Cerebro-spinal meningitis	6	5	3	3
Measles	181	33	171	30
Diphtheria	38	16	43	23

Yellow Fever.—Twenty-five deaths from the disease are reported to have taken place in Havana during the week ending June 28th. Last week the citizens of Benson, A. T., were reported to have sent a petition to the Surgeon-General of the Marine-Hospital Service asking for the establishment of a quarantine station at Nogales, to guard against the introduction of yellow fever from the infected districts on the western coast of Mexico.

Cholera in Europe.—The outbreak at Toulon, mentioned in our last issue, has become unmistakably epidemic during the past week, and has spread to Marseilles, at which port the sanitary authorities very properly decline to issue clean bills of health to outgoing vessels. Two cases are also reported from Saluzzo, in northern Italy. The daily number of deaths from the disease in Toulon is stated as from eight to ten. M. Brouardel and M. Proust, who are studying the outbreak by order of the French Government, are said to have come to the conclusion that the disease is really Asiatic cholera, although of a mild type. It is reported that Dr. Koch will offer his services in investigating the nature of the outbreak. France and the neighboring countries seem to be taking all possible precautions to check the spread of the disease. Arrangements are being made for fumigating passengers and merchandise at the Paris railway

stations. At Gibraltar, where some hesitation appears to have been felt at first, it has finally been decided to quarantine vessels arriving from French Mediterranean ports. A like course has been entered upon by Spain, Turkey, Austria, and Italy, and at Odessa vessels from China or India are to be detained twenty-four hours for observation, and two weeks if they are not provided with clean bills of health. Spain, being dissatisfied with the course pursued by England, will quarantine all vessels from that country. Besides these maritime quarantines, the Spanish Government has established a sanitary cordon along the French frontier, the Italians are subjecting overland passengers from France to a detention of five days, and Austro-Hungary is about to take measures to the same intent. The need of vigilance is equally recognized on this side of the Atlantic. On Monday the Surgeon-General of the Marine-Hospital Service recommended to the Secretary of the Treasury that an appropriation be asked for providing for the appointment of inspectors at American consulates at foreign ports, to be charged with sending information of the departure of emigrants and merchandise from infected districts. This recommendation, having been approved by the Secretary, has gone to the Senate Committee on Appropriations. On the same day a rather wild proposition was introduced into the House appropriating \$200,000 to be expended by the National Board of Health in preventing the introduction and spread of the disease in this country. On Thursday of last week the Health Officer of the Port of New York published the following notice: "Masters of vessels and pilots will please observe that, on and after June 30th, all vessels arriving from the following ports will be boarded and examined from the quarantine ship in the Lower Bay—viz.: All ports in the West Indies, Bahamas, Bermuda, Mexico, the Spanish Main, the East Coast of South America, and the West Coast of Africa; also all vessels from ports where cholera or yellow fever prevailed at the time of departure, or upon which cases of cholera or yellow fever have occurred during the passage." The Canadian Government has ordered the quarantining of all vessels from the infected French ports, whether arriving directly or after touching at other foreign ports.

Our Sanitary Representatives abroad this summer will include Dr. Alfred L. Carroll, the secretary of the Board of Health of the State of New York, and Dr. Woolsey Johnson, one of the commissioners of the Health Department of the city of New York.

An Italian Hospital has been opened in London, and we learn from the "Gazzetta degli Ospitali" that persons of all nationalities will be admitted, as well as of all religions and all shades of political opinion.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from June 22, 1884, to June 28, 1884:*

CLEMENTS, BENNETT A., Major and Surgeon. Ordered to relieve Major Joseph P. Wright, surgeon, of his duties as attending surgeon at the Leavenworth Military Prison, Fort Leavenworth, Kansas. Major Wright, on being relieved, ordered to report to the commanding general, Department of Texas, for assignment to duty. Par. 7, S. O. 144, A. G. O., June 21, 1884.

DICKSON, JOHN M., Captain and Assistant Surgeon. Assigned to duty as Post Surgeon, Alcatraz Island, California. Par. 3, S. O. 71, Headquarters Department of California, June 19, 1884.

GIRARD, A. C., Captain and Assistant Surgeon. Granted leave of absence for six months, with permission to go beyond sea. Par. 11, S. O. 148, A. G. O., June 26, 1884.

Society Meetings for the Coming Week:

TUESDAY, *July 8th:* Medical Societies of the Counties of Chautauqua (annual). Clinton, Jefferson, Madison (annual), Oneida (annual), Ontario (annual), Rensselaer, Schuyler, Tioga, Ulster, and Wayne (annual), N. Y.

WEDNESDAY, *July 9th:* Medical Societies of the Counties of Cayuga and Seneca (annual), N. Y.; Tri-States (New York, Pennsylvania, and New Jersey) Medical Association (Port Jervis, N. Y.).

THURSDAY, *July 10th:* Brooklyn Pathological Society; Medical Society of the County of Fulton, N. Y.

FRIDAY, *July 11th:* Medical Society of the Town of Saugerties, N. Y.

OBITUARY NOTES.

Dr. William Sutton.—Dr. Sutton, who had retired from practice, died on Friday, the 20th inst. He was of English birth, and came to America about thirty-five years ago. For several years he served as one of the board of surgeons to the New York Police Department. He was seventy years old at the time of his death.

Dr. Joel Foster.—Dr. Foster died on Sunday, June 29th, at the age of eighty-two years, as the result of an acute illness attended with jaundice. Up to within a few weeks of his death he continued in the busy practice of medicine. Dr. Foster was a native of Vermont, and was graduated in medicine at the Jefferson Medical College, of Philadelphia, in the year 1826. He began practice in Schoharie County, and came to New York in 1835, where for many years he did a large and laborious practice. He was one of the original members of the Academy of Medicine, and a member of the Medical Society of the County of New York, of the Medical Society of the State of New York, of the Physicians' Mutual Aid Association, of the Society for the Relief of Widows and Orphans of Medical Men, and of the New York County Medical Association. He was one of the founders of the New York Infant Asylum, of which he was the honorary president at the time of his death. The demands of Dr. Foster's life allowed him but little opportunity to contribute to the literature of the profession, but he was a devoted student in microscopical research.

Dr. Charles H. Rawson, of Des Moines, Iowa.—Dr. Rawson died on Friday of last week, at the age of fifty-six years. He was born in Vermont, and was a graduate of the Bellevue Hospital Medical College. Early in his professional career he was a surgeon in the service of the Pacific Mail Steamship Company, and was afterward connected with the United States Marine Hospital at San Francisco. He settled in Des Moines in 1856, and served as surgeon of an Iowa regiment during the civil war.

Letters to the Editor.

ANOTHER CASE OF ZOSTER FOLLOWING TRAUMATISM.

IMLAYSTOWN, N. J., June 23, 1884.

To the Editor of the New York Medical Journal:

SIR: Seeing in the journal for last week the report of a case of zoster following an injury, I thought it might be of interest to record a similar case recently under my care. A lady, aged sixty-five, of good general health, tripped and fell down three steps leading from one room to another, striking upon her forehead. The pain was not very severe at the time, and soon

passed off. Two days after, she sent for me on account of what I took to be neuralgia of the first division of the fifth nerve, for which I prescribed, but without much effect. After three days more, an herpetic eruption appeared, followed for several days by additional clusters of vesicles, which ceased to break out simultaneously with the disappearance of the pain. The pain and eruption were entirely confined to the area supplied by the right ophthalmic nerve. In three weeks from the receipt of the injury the eruption had entirely disappeared. The treatment consisted of saline ferruginous laxatives and soothing applications.

Very respectfully,

H. G. NORTON, M. D.

Proceedings of Societies.

CHICAGO MEDICAL SOCIETY.

Meeting of June 16, 1884.

The Significance of Jaundice in Diagnosis.—Dr. W. E.

QUINE read a paper in which, after alluding to the various theories that had been advanced in explanation of the obstructive and the non-obstructive varieties of jaundice, he pointed out that the attendant symptoms were mostly due to the presence of colorless bile acids, the bile pigment being harmless. Cerebral disturbance due to hepatic derangement, and associated with cholemia, was not caused by the presence of normal bile, but by different though unexplained species of toxæmia. Slight jaundice was often overlooked, and in some instances could not be distinguished from the cachexiæ, except by the discovery of bile acids in the urine; so that the diagnosis usually turned upon the discovery of the cause, and not upon the mere recognition of the effect. Jaundice coming on suddenly during apparent health, and without pain, was usually of emotional origin and transitory. When it depended on disease or injury of the brain, acute atrophy of the liver, snake-bite, or an infectious fever, it was always associated with mental disturbance. If it was attended with fever, and was well marked, it was secondary to inflammation of the biliary passages, pneumonia, toxæmia, or infective inflammation of the portal vein. If it came on suddenly, and was preceded by paroxysmal pain and vomiting, it was caused, nine times out of ten, by biliary calculi. If it was preceded by typical symptoms of gastro-duodenitis, it was obviously of catarrhal origin. Impassable obstruction of the common bile-duct was shown by jaundice of great intensity, by clay-colored stools, and, in recent cases, by distension of the gall-bladder. Jaundice caused by sudden obstruction of the biliary passages was always associated with paroxysmal pain and nausea, but there was no means of ascertaining the nature of the obstructing body except its discovery in the stools. In the rare cases of sudden obstruction by cancerous, hydatid, or aneurysmal tumors, there was almost always a history of impaired health, enlargement and deformity of the liver, ascites, etc., which, together with physical exploration, would lead to a correct diagnosis. A sudden return of the natural color of the faces would confirm a diagnosis of obstruction. Occlusion of the cystic duct might be attended with as much pain, nausea, and distension of the gall-bladder as occlusion of the common duct, but there would be no jaundice. In occlusion of the hepatic duct the same symptoms were present, including jaundice, and excluding distension of the gall-bladder. It was impossible to distinguish between occlusion of the hepatic and occlusion of the common duct, but the former was rare, because the duct

increased in size from above downward. If jaundice persisted after the symptoms of biliary colic, or of catarrhal inflammation, had disappeared for a month, or if jaundice, having subsided after a biliary colic, returned slowly and without pain, it might be assumed that stricture of the duct had resulted, from inflammatory thickening, from adhesion of its walls, or from the cicatrization of an ulcer. Repeated attacks pointed to gall-stones. If jaundice came on slowly, without antecedent colic or catarrh, and without evidence of impaired health or of portal obstruction, it was probably caused either by pressure upon the duct or by the growth of a tumor within its walls. When the body producing the pressure was large enough, it might readily be appreciated, as in the case of pregnancy, ovarian tumor, aneurysm, distension of the colon, etc.; but, when it was small, or constituted by enlargement of lymphatics in the fissure of the liver, it was apt to escape detection. Slight but persistent jaundice might be due to incomplete occlusion of the common duct or to complete occlusion of a branch of the hepatic, but usually it was found associated either with valvular disease of the heart, with some disease of the lungs which obstructed the circulation, or with cirrhosis of the liver. If ascites co-existed, the disease was either cirrhosis or cancer of the liver; if the liver was abnormally small, it was cirrhosis, and, if it was too large, it was either hypertrophic cirrhosis or cancer, and the differentiation between the two was seldom attended with difficulty. Absence of jaundice did not imply absence of hepatic disease, since the liver might be destroyed by disease, or extirpated by operation, without jaundice ensuing. Jaundice was not a prominent symptom of hepatitis, if we rigidly excluded catarrhal inflammation of the biliary passages. Neither was it a feature of hepatic abscess, in which, at most, a mere muddiness of the complexion was usually seen. These affections were rare in temperate latitudes, and, when encountered, were generally found to be secondary to direct injury of the liver or to infective inflammation of the portal vein. Jaundice was not a symptom of waxy or of fatty liver, or of hydatids, except as an extraordinary complication.

Dr. G. C. PAOLI thought there was no doubt that jaundice often escaped recognition in cases of disease. In scirrhus of the liver there might be only very slight pigmentation, and no pain, and we could not diagnosticate the disease in its early stages. In some affections there might be yellowness of the conjunctiva, and yet we might regard it as trivial, and the same might be said of slight jaundice accompanying some serious maladies. In fever with icterus, in a few weeks—perhaps three—there would be clay-colored stools, but without organic affection of any of the vital organs.

Dr. S. H. STEVENSON asked the author of the paper if it was the cholesterin that gave rise to toxic or cerebral disturbance in cases of obstructed bile-ducts.

Dr. J. J. M. ANGEAR questioned the adequacy of any of the theories that were held to explain the connection between the pigmentation of the skin, the state of the biliary function, and the symptoms.

Dr. A. R. JACKSON admired the compactness of the paper; it was a model to be emulated, giving just what was wanted, stripped of verbiage.

Dr. J. H. ETHERIDGE alluded to the diversity of coloring matters in pigmentary substances and to the complicated relations of vascular and nervous derangement in the production of jaundice in many cases.

Dr. C. T. FENN asked what it was that gave rise to a jaundiced condition of the skin after death in cases where death was due to hepatitis.

Dr. QUINE remarked that it had not been proved that bile was poisonous, or that cerebral symptoms followed as a result

of its presence in the blood; the blood and the secretions might be saturated with it for years and no cerebral disturbance ensue. He could not answer all the questions that had been put, nor could he say how the information was to be obtained. As to the occurrence of jaundice after death, alluded to by one of the speakers, he was not aware of the fact.

The Effect of Noise upon Certain Forms of Deafness.—

Dr. G. F. HAWLEY read a paper in which he remarked that, more than two hundred years ago, Dr. Thomas Willis, of Amsterdam, described a certain form of deafness in which the hearing was improved by noise. This symptom, termed *paracusis Willisii*, had been accepted by most aurists, but no satisfactory explanation of it had ever been given. While Politzer, von Trötsch, and others considered that it depended on some change in the position of the ossicles or of the *membrana tympani*, many, like Kramer, took the ground that it was due to a stimulation of the auditory nerve, which was thus forced to a more healthy action. [Experience favored the theory that the middle ear was the seat of the symptom, some change being brought about by the constant noise which restored the hearing for the time being. What this change was was still open to discussion, and it might be of interest if he related the following case, which had come under his observation when he was house surgeon at the Golden Square Hospital, in London:

Mrs. H., thirty years of age, had suffered for five years with marked deafness in both ears. She heard common conversation with difficulty except when there was a noise, but then her hearing appeared to be greatly improved. On the left side a watch could be heard only upon contact, and on the right side at a distance of two inches. A tuning-fork showed no trouble with the acoustic nerve, but clearly indicated some disturbance of the middle ear. The drumhead was normal as to tension, color, etc. There was perfect mobility of the malleo-incudal joint, and nothing indicated ankylosis of any of the tubes. The throat appeared healthy, and both Eustachian tubes were patent.

This case was a good example of the form of deafness under consideration. Roosa, however, mentioned two cases in which the drumhead was more or less destroyed, and yet noises improved the hearing. In both cases the ossicles were intact. Politzer, in his "Aural Surgery," stated that the improvement was seen only in middle-ear affections of an adhesive or sclerotic character, and regarded it as a most unfavorable symptom. Roosa, on the contrary, stated that it was found in many forms of ear disease, and did not necessarily prevent favorable results from treatment. In his article on "The Effects of Noises upon Diseased and Healthy Ears," he said: "I have known two cases where this symptom occurred in patients who regained their hearing perfectly. While the symptom frequently accompanies incurable disease of the middle ear, I believe it is a very frequent symptom in subacute cases where both ears are affected. Of course, it would not be observed in disease of one ear only." Whatever the cause of the symptom, that writer thought we were justified in believing that certain pathological changes were present in the middle ear which would be found at no other time. But in what did the change consist? Willis thought it was brought about by the action of strong sound-waves upon a relaxed *membrana tympani*. So long as the drumhead was relaxed, it refused to respond fully to wave-impressions—it was not a perfect conductor until its tension was restored. Noises, by forcing air against the membrane, pressed it inward and restored its tension for the time being. If the improvement was found only in such cases as Willis described, we might accept his theory, but, unfortunately, it was present when there was no change of the drumhead. There were two other elastic membranes in the middle ear, one of which took as important a part in conveying wave-impressions as the *membrana tympani*, and any change in it would be fully as disastrous

to hearing—he referred to the membrane of the *fenestra ovalis*. When we considered the extraordinarily fine shades of vibrations transmitted by this membrane to the fluids of the labyrinth, were we not justified in expecting that any loss of accuracy and precision in its action would cause a corresponding loss of hearing power? According to Riemann, the movements of the stapes in the fainter tones were so slight as to escape detection even with the highest power of the microscope; therefore a corresponding sensitiveness must be present in the membrane for the appreciation and transmission of these vibrations. If, then, the membrane became relaxed or lost its vibrating power from any cause, it would no longer act as a sound-conductor, but as a damper to wave-impressions. Not only must this elastic plate (so called by Politzer) be capable of responding fully to any wave-impulse, but it must also bear a certain relation to the foot of the stapes, *i. e.*, a due amount of pressure must be applied by the stirrup, and a sufficient resistance be offered, in every ear that possessed perfect hearing. A proof of this statement lay in the fact that, when deafness was caused by destruction of the drumhead, the incus, and the malleus, the hearing was frequently improved by an artificial drumhead, which pressed the loose stapes against the membrane of the *fenestra ovalis* and restored the relative position of the parts. When the membrane was relaxed, the pressure of the stapes was wanting, owing to the absence of resistance in the diseased membrane itself. Until we found some means of restoring this resistance, the deafness remained. Thus, by the loss of elasticity in this membrane we lost two important factors in perfect hearing: 1. This membrane, like the *membrana tympani*, when relaxed, failed to act as a conductor of sound by not responding to vibrations given it. 2. The proper relation between it and the stapes was destroyed, the necessary pressure and resistance being absent. We found, in the case of an atrophied drumhead, that hearing was frequently improved by inflating the middle ear, thus restoring the tension of the membrane by forcing it outward. One might suppose that such inflation would likewise restore the hearing when its loss was due to relaxation of the membrane of the *fenestra ovalis*; unfortunately, the same act which might restore its proper tension to the membrane at the same time forced it inward, thus separating the stapes from it. Though the membrane might be in a proper condition for receiving and transmitting sound-waves, the stapes, from the absence of any pressure applied by it to this membrane, would be unable to perform its duty—there would be more or less obstruction to the passage of sound at this point. Whatever, then, restored the hearing in these cases must not only renew the tension of the membrane, but maintain as well the normal relative position between it and the stapes. This, in the writer's opinion, could only be accomplished by some influence brought to bear upon the membrane and the stapes from outside the middle ear. If, now, we considered the effect of wave-impulses upon the membranes and the ossicles, we could understand how a loud and continuous noise (as the writer thought) might improve the hearing where the deafness was due to such pathological changes as had been described. The air set in motion by this noise struck upon the drumhead and upon the ossicles, and pushed them inward; this forced the air in the middle ear against the membrane of the *fenestra ovalis*, which, if relaxed, was made tense by this pressure. At the same time the relative position of the membrane and the stapes, as to pressure, etc., was also restored, and hearing was therefore improved for the time being. This noise, which would confuse a person with normal hearing, was absorbed, so to speak, in removing the cause of the deafness. In the case of a perforated drumhead the vibrating air acted directly upon the diseased membrane and stapes. Von Trötsch

mentioned the case of a magistrate who, being so afflicted, improved his hearing by pressing a bit of stick against his drum-head. Allen, also, in his "Aural Surgery," stated that the hearing power was increased in a patient who presented herself with marked destruction of the drum-head by pressing cotton against the ossicles. Another case had been noted in which a large perforation existed, and in which, both before and after the healing of the perforation, the hearing was improved by pressure. Although these three cases did not in themselves place this theory beyond dispute, they yet made it worthy of consideration, and might encourage us to further investigation.

Dr. S. J. JONES remarked that the condition was not always dependent on the same cause. In some cases pressing cotton on the stapes would increase the hearing power, a tuning-fork placed between the teeth might also be better heard with the affected ear, and often to place the hand on a piano would excite the affected ear to action more acute than that of the healthy one in the transmission of delicate sounds.

Chronic Cystitis with Hyperæsthesia of the Urethra; Perineal Cystotomy.—Dr. W. L. AXFORD related the case of a man, sixty-six years old, of a gouty diathesis, a gardener, who had been under treatment at intervals for the past eighteen months for chronic cystitis and hyperæsthesia of the urethra, and had also had attacks of nephralgia, which were relieved by hypodermic injections of a quarter of a grain of sulphate of morphine. In his last attack, however, this treatment afforded no relief, and rectal suppositories of opium and belladonna gave only partial relief. The urine was voided only by great effort, small quantities being passed every five minutes, and the bladder was full continually. This condition lasted for three days. Attempts at catheterization were attended with excruciating agony, which continued for four hours, and the catheter was introduced every six hours. Large doses of opium failed to relieve the pain produced by the extreme hyperæsthesia of the urethra, and, as a last resort, cystotomy was performed. It relieved the patient very much for the time, but he died in a few days. A drainage-tube that was introduced very soon became occluded with mucus and phosphates, the latter being withdrawn in masses as large as a pea. The cystitis was found to be exceedingly extensive, and the urine very fetid and ammoniacal. The man suffered also from an enlarged prostate. With reference to the operation, the speaker would do it again in a like case; it had been the means of relieving the patient from very acute pain, and had saved him at least a dozen catheterizations. The kidneys were found cirrhotic at the post-mortem, and the liver was in like condition.

Dr. C. T. PARKES approved of the treatment, and further stated that many cases of cystitis were best treated by median cystotomy.

LISTON H. MONTGOMERY, M. D., *Secretary.*

NEW HAVEN MEDICAL ASSOCIATION.

Meeting of June 16, 1884.

The President, Dr. F. E. BECKWITH, in the chair.

Fracture of the Spine in the Lumbar Region; Death from Tetanus.—Dr. H. FLEISCHNER presented a specimen with the following clinical history: The patient, a powerful, robust man, a roofer by occupation, seven years ago fell from a height of thirty feet, striking with his feet on some stones. He sustained a complete comminuted, but not compound, fracture of the tarsus, also fractures of the sternum, two ribs, and the left forearm, and an injury of the spine, the exact nature of which could not be determined at the time. His condition was dangerous, and early death was anticipated. There was paralysis

of the left lower extremity. For two or three days his bladder was emptied by the catheter, and his rectum by enemata. Then he commenced to improve, but recovery advanced very slowly. Hemiparaplegia, affecting the right lower extremity, persisted. His condition was a painless one for a year. Subsequently he suffered greatly from neuralgia, and became addicted to the habitual use of opium. He would inject hypodermically, during the paroxysms of pain, six, eight, or ten syringefuls of a saturated solution of morphine at once. His appetite was good and his general condition excellent. He was hopeful, and expected restoration to health. Last Wednesday evening he experienced difficulty in deglutition. Thursday morning he complained of pain in the back of the neck, and was able to swallow only on making considerable effort. It was clear that he was suffering from tetanus. In the afternoon there was marked emprosthotonus. Enemata of chloral were administered, but he did not sleep. Friday morning he had very violent spasms. He had had none before. At 6 A. M. his temperature was 103° F., pulse 110, respiration irregular; sometimes slow and sometimes fast. At 10 A. M., temperature 105°, pulse 140. He had been taking two grammes of chloral every two hours, and had taken four grammes during the morning. He was able to open his mouth slightly, and a little beef-tea was given which he swallowed more easily than before. His breathing at this time was harsh and stridulous. Suddenly there was relaxation of the spasm, and he died at once. Five minutes after death the temperature was 108°.

Dr. Fleischner presented the four upper lumbar vertebræ from this patient. The spinal curve in the specimen was in the wrong direction. The right inferior articular process of the second lumbar vertebra was displaced and enlarged. There was no intervertebral foramen between the third and fourth vertebræ on the right side. There was enlargement of the neural arch, with trabeculae of new osseous tissue inside the vertebral canal. The meninges were adenomatous and adherent to the vertebræ, and contained bony plates. The intervertebral cartilage between the second and third vertebræ on the left side was reduced to a mere trace; on the right side it was replaced by bony proliferation, and there was ankylosis of the adjacent vertebræ. There was no intervertebral opening on this side, which accounted for the paralysis. The cord ended lower down than usual, but above the seat of injury. There were bony deposits between the nerves and membranes lower down.

Renal Calculus.—Dr. M. C. WHITE presented a kidney, removed from a patient who died of Bright's disease, in the pelvis of which were two calculi, one of them as large as a hen's egg, the other somewhat smaller. There was also a tumor connected with one of the ovaries.

Heart and Aorta from a Patient who died during the Administration of Ether.—In presenting this specimen Dr. WHITE remarked that, in cases of death from the inhalation of ether, recent discussions in the Academy of Medicine of Paris had rendered especially interesting the inquiry as to the presence of air in the blood-vessels. Careful examination in this case failed to reveal the presence of any air in the heart, the great vessels of the trunk, or the vessels of the brain. The aorta and its branches, as well as the arteries in general, were atheromatous and calcified. The abdominal aorta contained a large calcareous plate. The ophthalmic artery was enlarged to twice its usual size, and was atheromatous. The heart was enormously hypertrophied, and weighed thirty-one ounces. The left ventricle was greatly thickened. The right was in a healthy condition. The mitral valve was ossified and contained calcareous plates about its base. The aortic semilunar valves were also ossified about their base, but they were not thickened so much as the mitral valve. The aortic orifice might have been well

closed by its valves, but the mitral probably could not. The right lung was in a normal condition. The left lung was oedematous.

Dr. BECKWITH, who was present when the patient, being about to undergo an operation for the relief of an inguinal tumor, died, stated that he died suddenly and unexpectedly. He had taken only a little ether, probably not more than two ounces. He became cyanotic and respiration ceased. The heart continued to beat for about eight minutes. Five minutes after the breathing stopped the pulse was 76, and strong. The tongue was pulled forward and artificial respiration employed, but without avail. He was unable to say whether the heart had been examined.

Aortic Aneurysm.—Dr. MAILHOUSE exhibited the heart and aorta of a man who died suddenly of hæmorrhage three or four weeks ago. He had suffered from rheumatism complicated by endocarditis last December, and had been continuously ill since. The heart was somewhat enlarged. The aortic valves were thick and nodular. The ascending aorta was dilated and showed evidences of endarteritis. The transverse aorta was dilated, forming a tubular aneurysm, and contained a clot. The thoracic aorta presented a sacculated aneurysm, nearly as large as the fist, which contained a clot, and from which there was an opening into the left bronchus. The specimen had been preserved in an undertaker's fluid, and was without odor.

Rhachitic Calvaria.—Dr. BECKWITH showed the calvaria of a child ten months old, which illustrated the condition of the anterior fontanelle in slight rhachitis. The specimen showed deficient ossification, not only at the circumference of the fontanelles, but also at circumscribed spots in the parietal and occipital bones.

The Therapeutic Use of the Digestive Ferments.—Dr. HERBERT E. SMITH read a paper on this subject. [See p. 9.]

Dr. C. A. LINDSEY, in opening the discussion, said that it had afforded him great gratification to listen to the paper by Dr. Smith, which treated the subject from a scientific standpoint, particularly in view of the fact that heretofore the chief literature of the subject had consisted of the advertisements of the manufacturing pharmacists, which were liberally circulated among the profession through the mail and by traveling agents. The practice of using these preparations had become so general that some establishments did a large business in manufacturing them exclusively. They were used, he believed, almost wholly without purpose and without good results. Personally, he had used them little, and the results had been unsatisfactory. He had derived advantage from the use of peptonized milk in a few cases in which the stomach could not retain anything else.

Dr. THACHER remarked that the changes which the sugars underwent in the body were of interest in connection with the pathology of diabetes. It had been suggested that sugar existed in the body in health chiefly in the form of maltose. Maltose was detected by the same qualitative tests as glucose, and rotated the plane of polarized light in the same direction. Quantitative tests, however, showed a difference. It had occurred to him to examine the urine of diabetic patients with reference to determining whether the sugar of the urine was maltose or glucose. In the cases of diabetes which had come under his notice during the last few years—some ten or twelve in number—he had found that the urine in each case contained glucose and not maltose. Perhaps it would eventually be found that the fundamental pathology of diabetes consisted in a change of the carbohydrates to some form of sugar not assimilable in the body. It was now, as Dr. Smith had said, generally admitted that the digestion of starch might go on during the early stage of stomach digestion. It should be borne in mind that the amount of action was not necessarily dependent on the amount of ferment in-

gested, for it was possible that, besides the direct action upon the food, there was also a stimulating action upon the gastric glands. Heidenhain's experiments seemed to prove this. He isolated a portion of the stomach of a dog, and placed digestible food in the other portion. He found that the amount of secretion in the isolated portion increased as the food in the other part became more fully digested. The secretion did not seem to depend merely on the presence of digested food, but of food which had been acted upon by the digestive secretions. His own belief was that the earlier the ferments were administered the better the result that would follow, if only they were not absorbed before secretion commenced. Early in the meal would seem to be the best time to give them. He was skeptical in regard to the safety of the passage of pepsin through the stomach. He did not regard it as certain that the products of protolytic digestion were all absorbed in the same state. The natural process might be that several proteids were taken up. If this was so, it was not desirable to carry artificial digestion too far, and particular care should be exercised to avoid the reduction of the products of this digestion to leucin and tyrosin.

Dr. SANFORD said that his experience bore out the suggestions of Dr. Smith. The watery extract of malt he had not found particularly useful. Maltine was appetizing and blood-enriching. It was of some aid to digestion, not in stomachal indigestion; but, when there was a deficiency in intestinal digestion, maltine did considerable good. He was quite certain that it was not always easy to get good pepsin. Perhaps this was the reason why pepsin had fallen into disrepute. Scheffer's saccharated pepsin had answered his expectations very well, because he did not use it indiscreetly. In cases of deficiency of gastric secretion he gave fifteen or twenty grains. His plan was to give an acidulated bitter tonic—for instance, Colombo with an aromatic and a drop of hydrochloric acid—before eating, and a large dose of pepsin after eating. If he was not mistaken, such treatment was very helpful. The good effect was not all due to the acid, nor, on the other hand, did stomachal indigestion do so well with pepsin alone. He was accustomed to use both and get good results. Small doses were insufficient. If the results were not satisfactory, it was sometimes necessary to repeat the dose at short intervals. Under such circumstances it was best administered in a solution with glycerin and an acid. Milk peptonized with Fairchild's extract of pancreas sometimes gave good results. It was not a good plan to give this preparation internally. He believed that generally the symptoms for the relief of which these preparations were given were due to a catarrh, and should be treated on the same principles as other catarrhs. The object of these remarks had been to speak well of pepsin if a pure article was used, and if it was given in good doses and in connection with an acid. Employed in this way, his experience had been that large doses never did harm and small doses seldom did good.

Dr. BARTLETT testified to the efficacy of pepsin given in good doses combined with other remedies in disturbances of the stomach and digestion.

Dr. LEIGHTON remarked that, when several active drugs were given in combination, it was not easy to distinguish the effect which was due to each one. He could recall fifteen recent cases in which he had prescribed, with good results, pepsin pure and simple, or mixed only with a little sugar and flavored. In an acid condition of the stomach, whether temporary or chronic, accompanied by eructations of gas, he had obtained positive, certain, and continuous benefit from two-grain doses of Fairchild's or Thayer's pepsin. Either gave perceptible results when taken unmixed after eating. Although neither was pure, each containing a large percentage of peptones, they were as pure

as could be obtained at present. His first experience in the use of remedies of this class had been with lacto-peptine, but he had left off using it, not because it was inert, but because it seemed unscientific. In his hands it had proved efficacious, doubtless because of the presence of a small quantity of pepsin.

The President stated that his experience in the use of pepsin coincided with that of Dr. Sanford. He believed that large doses never did harm, and that small doses seldom did good. He commenced with doses of a few grains, but quickly increased the dose to twenty grains of saccharated pepsin. For an adult the proper dose was from twenty to sixty grains. In full doses in infants it did some good. Given alone and in full doses it was possible to do a great deal with it.

In reply to an inquiry addressed to him, Dr. SMITH said that he had made no quantitative tests to determine the relative value of the different brands of pepsin. Fairchild's and Thayer's both gave a very fair result in the laboratory. Either was very efficient. He also remarked, in closing the discussion, that he had been gratified by listening to the clinical experience of the members, especially in regard to the use of extract of pancreas. He believed that it would be found difficult to hit upon the correct time to give it, and the requisite amount of alkali to give with it.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Meeting of May 28, 1884.

(Continued from vol. XXXI., page 732.)

Conclusion of Dr. Theophilus Parvin's Report of the Obstetric Department of the Philadelphia Hospital, for the Quarter ending April 30, 1884.—The occurrence of a chill at the onset of septicaemia is by no means a constant phenomenon. While Dr. Macdonald refers to a chill marking the advent of lymphangitis, Siredey regards it as always present in phlebitis, usual but not invariable in lymphangitis; it is multiple in the former, single in the latter. The cases observed at the hospital show that a chill was not constant in septicaemia, even in a fatal form of the disease. While we may in some cases, by the great variations in temperature, be able to diagnose between septicaemic phlebitis and lymphangitis, there are decided oscillations in temperature observed in the latter, though much less

Bertha Lambert, aged twenty-five; puerperal septicaemia:

DATE.	PULSE.		DAY OF DISEASE.	TEMPERATURE.	
	Morning.	Evening.		Morning.	Evening.
5	...	88	1	...	99°
6	64	84	2	98.5°	98.7
7	64	112	3	98.6	103 Chill at 3 P. M.
8	96	84	4	100.0	106 Chill at 7 P. M.*
9	100	85	5	100.0	100.5
10	102	114	6	101.7	101.4
11	96	110	7	99.8	100.8
12	100	100	8	102.4	102.4
13	96	96	9	102.8	101.8
14	98	102	10	98.6	100.5
15	80	96	11	97.7	99.4
16	84	98	12	99.4	99.8
17	84	85	13	98.0	99.0
18	88	77	14	97.8	98.7
19	74	72	15	98.0	98.2
20	80	86	16	99.6	100.0
21	73	78	17	100.0	100.4
22	72	85	18	98.4	99.0+
23	76	68	19	98.3	98.8
24	72	97	20	98.4	98.9
25	82	87	21	99.5	99.2

* Pulse before chill, temperature afterward.

+ Child died of pneumonia.

than in the former; and, besides, some cases present the combined forms, lymphatics and veins alike affected. There is herewith presented the temperature chart of a patient who suffered with what I at the time believed to be lymphatic septicaemia, and yet the reading of the chart might justify the conclusion that the disease was phlebitic, though early in its manifestation.

Looking at it, one sees that the temperature was normal until the morning of the third day, when the first chill occurred; at that time it rose to 103°; the next day a chill in the evening, and the mercury marked 106°, but fell the next morning to 100°; the next most marked difference was observed on the ninth and tenth days; the evening of the former it was 101.8°, the next morning 98.6°. I show a second temperature chart of

Kate Fleming, aged twenty-two; puerperal septicaemia:

DATE.	PULSE.		DAY OF DISEASE.	TEMPERATURE.	
	Morning.	Evening.		Morning.	Evening.
10	88	88	2	98.0°	98.0°
11	90	92	3	98.9	98.0
12	82	84	4	98.2	99.6
13	108	104	5	100.6	102.2
14	96	112	6	101.5	103.0
15	124	106	7	104.4	102.2
16	81	90	8	99.6	103.3
17	80	88	9	100.4	101.8
18	74	88	10	99.2	101.2
19	116	120	11	103.0	105.0
20	104	98	12	101.4	101.3
21	90	106	13	103.0	101.3
22	94	112	14	100.3	104.0
23	98	98	15	100.8	100.2
24	84	82	16	99.0	98.8
25	93	87	17	97.2	98.8
26	79	72	18	98.0	98.2
27	67	70	19	97.8	97.4
28	63	78	20	97.2	98.2
29	80	62	21	98.0	98.5
1	64	72	22	97.6	98.4
2	66	92	23	97.8	99.3
3	80	..	24	97.0	....

a patient whose temperature was under 100° until the fourth day; was 104.4° the seventh day, dropping to 99.6° the eighth day; reached 105° on the eleventh day, the twelfth only 101.4°; and who had in the course of her illness at least two chills.

The cases of septicaemia were too few, and the discrimination between lymphangitis and phlebitis not always made, to permit me to give a positive opinion; nevertheless, it seems to me probable that in lymphangitis the oscillations of temperature are always such that the thermometer marks a higher degree in the evening, while in phlebitis the highest temperature occurs quite as often in the morning as in the evening.

Returning to the subject of normal temperature in puerperality, it will be seen from the chart presented that the temperature of the third was no higher than that of the first or of the second day. In looking at a temperature chart given by Dr. Macdonald (Edinburgh "Obstetrical Transactions," vol. vi), taken as the result of observing the temperatures of thirty women, I find the highest temperatures the third, fourth, and seventh days; the thermometer registered 99.5° the third day, and 99.2° the fourth and seventh days.

Tarnier remarks that momentary elevations of temperature do not generally involve an unfavorable prognosis; but, when they are progressive and continuous, especially when the thermometer placed in the axilla goes above 100.4°, some complication is to be feared.

One of the subjects delivered at the hospital had a slightly subnormal temperature. She was a girl, eighteen years of age, who, three hours after a normal labor, had a temperature of 99°; this fell so that on the third day it was only 98°, and so

continued for a week. During a part of this time her pulse was 56, and even only 48.

The presence of albumin in the urine of the pregnant woman has often, even generally, engaged the attention of obstetricians; but comparatively little concern is usually shown as to its presence during labor, or in the puerperal state. Possibly it may be quite as important to examine the urine of the lying-in as of the pregnant woman, especially if she has had even slight septicæmia.

But, first, how frequent is albuminuria in pregnancy? In seventy-two pregnant women, albuminuria was found in five. It will be observed that this proportion is very much less than that given by Charpentier,* quoting Dumas, who, combining the statistics of several observers, makes the proportion one to five or six. It seems to me, both from hospital statistics and from observations in private practice, this proportion exaggerates the frequency of the accident.

By the albuminuria of labor is understood not only the disorder as occurring during labor, but also that of the two or three days immediately preceding. This is very much more frequent than the albuminuria of pregnancy, but the cases examined with reference to this point were too few to determine the proportion.

Seven of the seventy-two women had albuminuria after labor; I think the number was much greater, but some of the women suffering with septicæmia did not have the urine examined until after convalescence, and the results of examinations made in others were not properly kept, or at least were not placed in my hands.

In three of the seven mentioned the albuminuria was slight and transient. In four women convalescing from septicæmia, the urine was found to be albuminous one month after delivery. Two had pus, blood, and hyaline casts in the urine; in a third, no pus, but blood and casts were present in the urine; as to the urine of the fourth, the microscopic appearances were not noted. In regard to two of these patients, I know that the catheter was first used after their being brought from the "fever" to the "convalescent ward," and therefore the explanation which Ols-hausen has suggested of the renal disorder fails in these cases; catheterism had nothing to do with its causation. In explanation of these cases, it is probably better to accept the teaching of Siredey, who regards puerperal nephritis as a constant complication of uterine lymphangitis or phlebitis.

Women may apparently, but not really, recover after pregnancy and labor; especially if there has been septicæmia is there a liability of renal disorder becoming chronic, and it is only by actual examination of the urine that the integrity of the kidneys can be determined.

Mauriceau compares the pregnant woman just before labor to a ship that has been nine months tossing upon a rough sea, and urges the importance of not letting the ship sink as she enters the port of childbed. It is not less the duty of the obstetrician to know that the ship has not suffered such damage on the ocean or in the port that she is unfit, without important repairs, to run the risk of another voyage.

Sugar in the urine of pregnant and of nursing women was first shown to occur by Blot in 1856. Differences of opinion hold as to the constancy of its presence in the conditions stated, as to its source, and as to its character. Macdonald found it in each of thirty-five cases whose urine was examined, and therefore regards it as present in all cases at some time or other of the puerperium. But neither Kleinwächter nor Spiegelberg refers to it as always present. In the examinations made daily of the urine of fifty women at the hospital (these examinations began a few days before and continued seven days after labor),

four women had sugar in the urine before labor, and six after labor, one of the six being also one of the four. In this woman the sugar was constantly and largely present up to eight weeks after delivery; she had remarkably well-developed mammary glands, and a most abundant secretion of milk. In this case Blot's suggested test for a good nurse—to wit, the quantity of sugar contained in the urine—would have proved true, so far as abundance of milk was concerned.

It has been shown that abrupt suppression of nursing causes the appearance of sugar in the urine; thus it is commonly observed in mammary abscess.

The fact that removal of the mammary glands in an inferior animal recently delivered causes disappearance of sugar from the urine, proves that it is incorrect to call the cases where sugar is found in the urine in pregnancy or childbed cases of glycosuria, but rather of lactosuria, unless we attach only the literal meaning to the first word in the compound glycosuria. Spiegelberg refers to the condition as an absorption diabetes; and this seems the opinion of most authorities. Tarnier, however, regards as very plausible the hypothesis that the sugar eliminated by the kidneys was sugar made very probably by the liver in view of the lacteal secretion, and which was not utilized in consequence of the momentary suppression of this function; further, he thinks new researches necessary, in addition to those of Hofmeister and others, to determine the question as to whether this sugar is glucose or lactose.

Whenever there is an exact correspondence between the milk supply and the demand, the former not being in excess of the latter, it is probable sugar will not be found in the urine; I think, therefore, that the experience of Macdonald—showing saccharine urine in all cases of lying-in women—is not the law.

An interesting case of secondary puerperal hæmorrhage occurred—interesting as to its ætiology, and instructive as to the means by which it was finally arrested.

The following is the history as given by Dr. Voorhees, the interne who had charge of the patient:

A. A., German, single, primipara; varicose condition of veins of lower limbs, this condition disappearing after labor. Labor at full term, March 5, 1884, lasting a little over twelve hours. Her condition was perfectly satisfactory up to the evening of the eleventh day after confinement; on that day she was transferred to the convalescent ward, and then saw the out-door agent as to keeping the father of her child in prison for refusing support. She was greatly distressed by this interview, and at 4.30 the next morning hæmorrhage began. Digital examination showed that the blood came from the uterus; the os was high up, flabby, and full of clots; the uterus was as large as if delivery had just occurred, and was soft and relaxed. Ergot was given; the child applied to the breast; the uterus was emptied of its clots, and friction used to stimulate contraction, but the bleeding still continued. Ice was then used to the abdomen and in the vagina; the bleeding was not stopped. Hot water was then freely thrown into the uterus, and the result was prompt and satisfactory. The patient made a good recovery. Although the uterine discharges were carefully examined, at no time was there any organized material found, nothing in the least indicating that this hæmorrhage was caused, for example, by the retention of a placental fragment.

Those who have read Dr. Fordyce Barker's admirable lectures upon puerperal diseases will remember the graphic description of a case of secondary hæmorrhage the second day of lying-in, due to an emotional cause, and in what perilous condition the poor woman was for some days. So, too, in the hospital case we have an example of hæmorrhage from a psychical cause. Believe or doubt as we may, say what we will, there are at times in medical practice just such sudden, startling, and strong proclamations of something more than flesh and blood in this human nature, telling us that the coarse material may be

* "Traité des accouchements."

prostrated through the finer spiritual, the psychical assert its power over the physical.

Further, as to this case, the great value of hot-water injections for the arrest of uterine hemorrhage never had a more striking illustration.

The final subject presented to you is that of uterine rupture. In reflecting upon the history of my three months' service, no event occurred in my duties to these unfortunate women—women often worthy of the profoundest pity as the victims of misfortune and of man's perfidy—which causes me greater sorrow in silence or in recital than a case where the uterus was ruptured in consequence of a shoulder presentation—a case which ended in death the eighth day after delivery. Yet I should fail in duty to my profession, that has been so good, so generous to me, if I did not make the case fully known. The patient was a well-formed, healthy multipara; she had been in labor nearly twelve hours when I first saw her, the left shoulder presenting. Ether was immediately given until she was thoroughly under its anæsthetic effect; and then, without violence, nay, with great ease, I passed two fingers behind the right knee, brought the foot down, and turning and delivery were effected in a few minutes; the placenta followed almost immediately; the child, quite a large one, was dead. The patient came out from the anæsthesia satisfactorily; her pulse was good; there was no complaint, no shock, no great hemorrhage. Yet that woman had a ruptured womb, the tear beginning at the os uteri on the right side, involving the cervix and the lower part of the body of the uterus, this condition being made known by the post mortem. If it be thought I ought to have known this accident at the time of delivery, I can only say that like ignorance happened to Dubois, to Hervieux, to Tarnier, and others—the first revelation of the uterine rent being made at the post mortem; these silent tears of the womb are, as Hervieux has suggested, probably more frequent than generally thought. No, my self-reproach is not in this, but in not having made myself, or by another, an examination during pregnancy, so that the abnormal presentation could have been corrected, if not then, at least early in labor. But let this pass. The great practical lesson to be drawn from the accident is not only the importance of an early rectification of a mal-presentation, but also an appreciation of the danger of rupture of the uterus, and how this accident occurs. The drawing now shown gives the position occupied by the child, and also and especially gives the change in form and thickness of the two cavities of the uterus, which, as so admirably described by Bandl, are formed when nature is unable to overcome the obstacle to labor found in such case. The one cavity is formed by the body of the uterus, and its walls become thicker and stronger; the other, by the cervix, and its walls grow thinner—become, indeed, so attenuated and weak that a very slight additional strain causes a tear at some point; that strain may come from a uterine contraction, or solely from the introduction of the finger; and thus peril from action, peril from delay, must be before the obstetrician's mind when called to a case of neglected shoulder presentation.

Of course, had I seen this patient an hour or two earlier, the event might have been different. The pressure of the presenting part had been so severe that a slough of the vesicovaginal wall occurred, and the patient, had she recovered, would have required an operation for the resulting urinary fistula; I have thought that possibly the uterine rent was in part the result of a slough also; but, be this as it may, there was not the slightest indication given at the post-mortem that any hemorrhage into the abdominal cavity had taken place.

One other topic I had designed presenting—the prophylactic treatment of puerperal septicæmia—but my paper has already occupied enough, possibly too much, of your time.

NEW YORK CLINICAL SOCIETY.

Meeting of February 22, 1884.

Dr. J. E. WINTERS, Chairman for the evening.

The Significance of Glycosuria in connection with Disease of the Brain and Cervical Cord, and with Dementia Paralytica.—Dr. A. McLANE HAMILTON read a paper with this title. [See p. 1.] Under the rules, the discussion was postponed until the next meeting.

Empyema (?) cured by Absorption.—The CHAIRMAN showed a child, three years old, who, when about twenty months old, began to suffer from pleural effusion, which lasted for nine months, six weeks having elapsed before he saw the case. The effusion on the left side was so great as to displace the heart an inch and three quarters to the right of the sternum. Under a tonic course of treatment, absorption progressed so far that the heart's impulse was to be felt in the median line, when an attack of measles took place, and was followed by a fresh accumulation. Seven weeks later, marked hectic fever came on, with night-sweats, and the child became very much emaciated and extremely anæmic, with clubbing of the fingers. Physical signs of disease in the other side of the chest appeared, and there was considerable stupor at times. After existing for nearly two months, these symptoms gradually subsided, and the child began to improve quite rapidly—absorption took place, the signs in the opposite lung cleared up, and the child had been practically well since June last. He was now well nourished, his appetite was excellent, there was no apparent retraction of the left side of the chest, and none could be made out by measurement. There was, however, a little dullness over the base of the left lung, and occasional friction-sounds were heard, but the heart was no longer displaced. Besides the tonic medication mentioned, frictions with a stimulating liniment had been used three times a day, for twenty minutes at a time. An exploring-needle had never been introduced, but the Chairman thought there could be very little doubt of the purulent nature of the effusion, because it continued so long, because of the intercurrent measles, and because of the hectic and the clubbing of the fingers, although the latter condition might have come on in the course of a serous effusion. As to the persistence of the physical signs, he had often seen it in cases of bronchitis long after the symptoms had disappeared.

Dr. ROBERT ABBE could not but feel that the Chairman's case lacked the proof of the hypodermic syringeful of pus, although it was probably one of empyema.

In reply to questions, the CHAIRMAN said that the family history was good, and that there had been no diarrhœa during the illness.

Dr. L. E. HOIT asked the Chairman if he had used cod-liver oil by inunction in this or in like cases.

The CHAIRMAN replied that the patient had taken the oil well by the mouth throughout the illness. He had given up its use by inunction, as the stomach was almost invariably affected by the odor, but he had seen good results from inunctions with equal parts of olive-oil and alcohol.

Diffuse Suppuration of the Pelvis and Thigh.—Dr. L. B. BANGS related the following case, and asked for a diagnosis: A man, thirty years old, was seen in his service in Charity Hospital. The case had been brought to his notice as one of bubo and intermittent fever. In January the right thigh became flexed and rotated inward. On examination, he found slight discoloration of the skin in the groin, a diffuse induration extending along Poupart's ligament toward the hip, and an obscure sense of deep fluctuation. After several days of poulticing, two small openings were seen in the groin, which were enlarged, when a

considerable quantity of very fetid pus was discharged, welling up from the deeper structures. The man gave a history of some pain in the back, not severe, and of a subsequent gonorrhœa with suppurating bubo, which latter had healed. There was some tenderness over the spine at the first lumbar vertebra. Nothing was found on examination of the ilio-costal region, the ilium, or the hip joint. The three sinuses were now probed, and were found to lead deeply to the inner side and anterior aspect of the thigh. One opened just outside the femoral artery. The general condition of the patient continued to depreciate, he had considerable fever, and four days ago he was etherized and the parts were laid open freely. A large cavity of pus was found on the inner side of the thigh, which communicated with the pelvis beneath Poupart's ligament. This was large enough to admit the finger. A probe was passed into it to the depth of two inches in the direction of the course of the psoas muscle, but would go no farther. No dead bone was found. Beneath the fascia lata several smaller cavities were found, discharging the same foul pus. Straining efforts by the patient forced out pus in considerable quantities from the pelvic opening. Counter-openings were made on the outer side of the thigh and drainage-tubes were inserted. A drainage-tube was passed into the pelvic opening as far as it would go, and it was ordered not to be syringed out. The temperature fell the next day to 100° F., and had since been normal. There had been very little discharge from the pelvic sinus. The patient expressed himself as feeling better than for a long time. Pott's disease, disease of the bones of the pelvis, and perinephritic abscess had all been thought of, but sufficient symptoms were not present to warrant any of these diagnoses.

Dr. ABBE suggested perityphlitis as a possibility, but thought, on the whole, that caries of the spine was the most plausible diagnosis. He had himself treated a large psoas abscess by repeated aspirations, in which no deformity of the spine existed and no evidence of vertebral disease could be discovered for a long time. Yet, at the autopsy, four vertebrae in the dorso-lumbar region were found carious.

Webbed Fingers.—Dr. ABBE presented a cast of a child's hand, illustrating a congenital deformity. There was webbing of the fingers, most marked at their extremities. He thought the case amenable to treatment by operation. There was also talipes varus of one foot, with some deformity of the toes.

Fibrous Polypi of the Rectum.—Dr. CHARLES B. KELSEY related the case of a man, thirty-five years old, who had been supposed to be suffering from piles for fifteen years. An examination showed two hard, whitish tumors projecting from the anus, one as large as a hen's egg, and the other about half as large, attached to opposite sides of the rectum, just within the internal sphincter. The pain on defecation was exceedingly severe, and there was profuse bleeding. The patient reduced the tumors himself on each occasion, but only with a good deal of suffering. Each tumor had a firm, good-sized pedicle. Both were removed with the clamp and cautery, together with a third one, attached posteriorly, which was smaller. Microscopic examination had shown the growths to be fibro-sarcomata. The patient recovered rapidly, and the relief was perfect.

Cancer of the Rectum; Excision.—Dr. KELSEY also related a case of this sort, which will be published hereafter. He raised the question whether the patient's chances would have been improved if the peritoneal wound had been sewn up. The statistics of between one hundred and fifty and two hundred cases showed only two recoveries after the peritonæum had been opened. He was opposed to any operation for the removal of cancer which involved opening the peritonæum.

Dr. BANGS did not see how, in the case related, sewing up the peritonæum would have affected the result.

Dr. ABBE thought the hot water and the iron solution had had something to do with producing shock, by their forcible entrance into the peritoneal cavity. Hence it seemed to him that it would have been better to sew up the peritonæum.

Dr. C. C. LEE, present by invitation, related two cases of accidental rupture of the rectum from dilatation of the bowel for stricture, in which recovery had taken place. In one there were no untoward symptoms; in the other there was great shock from peritoneal hemorrhage.

Dr. KELSEY expressed himself in favor of dividing strictures of the rectum with Paquelin's cautery, instead of performing lumbar colotomy.

RHODE ISLAND MEDICAL SOCIETY.

Seventy-third Annual Meeting, held in Providence, Thursday, June 19, 1884.

The President, Dr. JOB KENTON, in the chair.

The Secretary's Annual Report.—The meeting having been called to order, the secretary, Dr. GEORGE D. HERSEY, read the minutes of the previous meeting, after which he read his annual report, by which it appeared that four meetings had been held during the past year—three in Providence and one in Newport. Four fellows had died during the year: Dr. T. W. Perry, Dr. Otis Bullock, Dr. Uriah H. Holbrook, and Dr. James Millar; two fellows had removed from the State, and withdrawn from the Society; nine new fellows had been admitted. The present number of active members was one hundred and eighty-seven.

The Fiske Fund Prize.—Dr. C. W. PARSONS read the report of the trustees of the fund. They had awarded a prize of \$300 for the best essay on "The Origin and Progress of the Malarial Fever now Prevalent in New England" to Dr. C. V. Chapin, the Superintendent of Health of the City of Providence. The prize for an essay on the other subject proposed had not been awarded. The following subjects were proposed for the year 1885: "Original Investigations in Household Hygiene," "The Present State of the Germ Theory of Disease," "Physiological and Pathological Effects of the Use of Tobacco," "Migraine, its Nature and Treatment"—the prize for the best essay to be \$200.

Reports of the Board of Censors were read by Dr. J. W. C. ELY. They recommended the following-named gentlemen for membership: Dr. HENRY S. SWAN, of Bristol; Dr. WILLIAM A. TREMAIN, of the Rhode Island Hospital; Dr. BYRON J. LILLIBRIDGE, of Providence; Dr. SANFORD S. BURTON, of Providence; Dr. BENJAMIN R. SYMONDS, of Providence; and Dr. ABRAHAM L. FALCON, of Central Falls. These gentlemen were afterward elected. Dr. LLOYD MORTON was recommended for anniversary chairman for 1885.

The Medical Examiners' Bill.—Dr. LLOYD MORTON reported, in behalf of the committee, that the bill had been passed by the General Assembly, in a modified form, to take effect on the 1st of July, 1884.

Officers for the Ensuing Year were then elected as follows: *President*, Dr. OLIVER C. WIGGIN; *First Vice-President*, Dr. HORACE G. MILLER; *Second Vice-President*, Dr. JOHN W. SAWYER; *Recording Secretary*, Dr. GEORGE D. HERSEY; *Corresponding Secretary*, Dr. EDWARD M. HARRIS; *Treasurer*, Dr. CHARLES H. LEONARD; *Censors*, Dr. ARIEL BALLOU, Dr. J. H. ELDRIDGE, Dr. J. W. C. ELY, Dr. G. P. BAKER, Dr. S. S. KEENE, Dr. BENJAMIN GREENE, Dr. E. T. CASWELL, and Dr. G. KINGMAN.

The Annual Address, on "Theism Viewed from the Physician's Standpoint," was then delivered by Dr. GEORGE I. CHACE.

The Anniversary Dinner was held at the Narragansett Hotel after the adjournment, Dr. J. W. C. ELY presiding.

Miscellany.

THERAPEUTICAL NOTES.

The Pharmaceutics of Nitroglycerin.—A somewhat amusing account is given in a recent issue of the "Gazette hebdomadaire de médecine et de chirurgie" of the difficulties encountered by a physician in attempts to obtain a preparation of nitroglycerin for medicinal use. One after another, the various apothecaries and manufacturing druggists to whom he applied confessed their inability to meet his demand, chiefly on account of the danger they supposed to lie in handling the substance. The doctor plaintively recounts these facts in a letter addressed to the editor of the "Gazette," and a member of the editorial staff, M. Vigier, makes the letter a text for a brief exposition of the pharmaceutics of the drug.

Although nitroglycerin itself is very explosive, there is no danger in handling or transporting the pharmaceutical solution, and the one-to-one-thousand solution may even be intrusted to patients. The nitroglycerin of commerce is made as follows: On the one hand, glycerin is mixed with three times its weight of concentrated sulphuric acid, and, on the other hand, *fuming* nitric acid is mixed with its own weight of concentrated sulphuric acid. The two mixtures are allowed to cool, then the one is added to the other, and the mass is left to itself for a few hours, when the nitroglycerin will be found to have fallen to the bottom of the vessel, and nothing remains but to wash it. The reaction between the monohydrated nitric acid and the glycerin is the following:



Nitroglycerin is a very stable and a very manageable substance, requiring to be guarded only against the effects of heat and of blows. It is almost insoluble in water, and is soluble only in strong alcohol. A one-per-cent. solution answers all the requirements of medicine. Dynamite, which is less dangerous to handle than nitroglycerin, is a mixture of aluminous earth with about two thirds its weight of the explosive; it burns without exploding, and detonates only under the action of fulminate of mercury.

The medicinal solution recommended by M. Vigier consists of one part of nitroglycerin and 999 parts, by weight, of ninety-per-cent. alcohol. Of this mixture five drops may be taken three times a day, in a little water, and the dose may be increased carefully to ten drops. The greatest caution is necessary in increasing the dose, not because the drug is poisonous in any ordinary doses, but because it is apt to give rise to most excruciating headache. Huchard's solution, recommended by that author for the treatment of angina pectoris, consists of thirty drops of a one-per-cent. solution of nitroglycerin in three hundred grammes (about ten ounces) of distilled water. Of this solution three dessertspoonfuls are to be taken daily at first, and then three spoonfuls.

The one-per-cent. solution is also employed hypodermically, but its administration by the mouth is to be preferred. Nitroglycerin is also called trinitrine, trinitrate of glyceryl, and glonoin.

The Tar-and-Turpentine Treatment of Diphtheria.—A correspondent of the same journal gives an account of his failure with this treatment in every one of four cases in which he tried it. The children all died, although the details of the method were carried out with the utmost exactness. The parents would not allow tracheotomy to be performed. The writer does not even think that the treatment gave any noteworthy palliation. While declining to pronounce judgment on this method in advance of further data, the editor of the "Gazette" adds that what he knows of it, so far, is not in its favor.

The so-called "Ozonizing Water."—At a recent meeting of the Paris *Société de thérapeutique* ("Gazette hebdomadaire de médecine et de chirurgie") M. Tanret stated that the name given by M. Boursier to his "ozonizing water" (*eau ozonisante*) was absolutely incorrect. We could not apply the term hydrate of terpene to an oxygenated watery solution of terpene, the hydrate of terpene being, as had been known for a long time, the definite, crystallized terpin formed by the combination of water with the terpene, or terebenthene, contained in oil of turpentine. M. Campardon had used the *eau ozonisante* in a case of diphtheria, but, although it had seemed to aid somewhat in the detachment

of the false membranes, he could not speak positively on that point, for the disease was already declining when the use of the remedy was begun. The solution did not seem to be a definite new compound; its odor was very much like that of the solution of *baume du commandeur* (an alcoholic solution of Peru balsam, benzoin, and a number of aromatics) which one of his patients had devised as a disinfectant. M. Tanret alluded to the fact that Berthelot's experiments had shown conclusively that oil of turpentine, although it absorbed oxygen, retained it in a very unstable combination, and then parted with it with great facility, so that it might play the part of an oxidizing body, did not really produce ozone under the conditions in question.

The Action of Quinine on the Cerebral Circulation.—Curci ("Sperimentale"; "Bull. gén. de thérap.") maintains that quinine has rather a tendency to produce anemia than hyperemia of the brain, and that it checks the effect of morphine in producing hyperemia. Therefore, he thinks, it is not contraindicated in the subjects of cerebral hyperemia, but, on the contrary, its beneficial action in sunstroke is probably due to its tendency to reduce the hyperemia.

The Kola Nut as an Astringent and Tonic.—M. Dujardin-Beaumetz showed a specimen of the fruit of the *Sterculia kola*, a tree indigenous to Central Africa, at a recent meeting of the Paris *Société de thérapeutique* ("Progr. méd."), and remarked that analysis showed that it contained a large amount of caffeine, tannic acid, and a little theobromine. Naval surgeons had employed it with success in the chronic diarrheas of hot climates, and its use was likewise indicated in cardiac affections and in the cachexia. He himself had seen good effects from it in these cases, given either in the form of an infusion of the roasted nut, as an elixir, or in the shape of chocolate. In all these cases it acted as a tonic and astringent.

Antipyrine, a New Antipyretic Alkaloid.—In the "Zeitschrift für klinische Medizin" (quoted in the "Centralbl. f. d. ges. Ther."), Filehne sets forth the medicinal properties of a new artificial alkaloid termed antipyrine, but does not give the method of its preparation or its chemical constitution. It seems to act very much like kairine, but to be free from some of the objectionable properties of the latter drug. The dose for an adult is thirty grains, to be repeated in an hour, and, at the end of another hour, the same amount or one half the quantity may be given again. For children the dose is from half to two thirds the dose for adults, and some reduction is advisable in the case of adults who are debilitated by chronic disease. At the time the article was written the preparation was not in the market.

The Late Dr. John G. Adams.—At a stated meeting of the Council of the New York Academy of Medicine, held June 24, 1884, the following preamble and resolutions were unanimously adopted:

Whereas, The Council of the New York Academy of Medicine has heard with profound regret of the recent death of their associate, Dr. John G. Adams, an original fellow, and at the time of his decease Corresponding Secretary of the Academy,

Resolved, That the Council desire to put on record their warm appreciation of his fidelity to his convictions, his genial friendship, his ripe culture, his courtesy, his liberal, earnest, and persistent interest in the Academy, and of his gentlemanly and Christian character.

Resolved, That a copy of the above preamble and resolution be entered on the minutes, be published in the medical journals of the city, and sent to his relatives.

G. M. SMITH, M. D.,)
H. T. HANES, M. D.,) *Committee.*

The Illinois State Board of Health is now engaged in revising the Register of Physicians, preparatory to publication. Any changes or corrections should be promptly sent to the secretary. Lists of the officers of the medical societies in the State are also requested.

Lactopeptine is a remedy which is constantly gaining in favor with the profession. Our own experience with it has been most satisfactory. In the summer complaint of children we have used it with excellent results. Indeed, we have found it very valuable as a preventive of this affection. We frequently order it, with this object in view, and we believe that our expectations have been realized.—*Canada Medical Record.*

Original Communications.

GUNSHOT WOUNDS OF THE LARYNX, WITH THE REPORT OF A CASE IN WHICH THE VOCAL BANDS WERE INVOLVED.*

By WILLIAM H. DALY, M. D.,

PITTSBURGH, PA.

THE literature of gunshot wounds of the larynx has not, so far as I am aware, been collated, excepting the cases compiled in the Medical and Surgical History † of the late War of the Rebellion.

These are peculiar as a class, from the fact that the missiles producing nearly all of them were of a large caliber. Of the thirty cases there tabulated as involving the neck and larynx, ten were fatal, and the termination of ten more was unknown; eight patients were discharged, and two returned to duty.

Not having sufficient time in which to collate all the cases that might be more or less accessible, I have thought it not out of place to append to this report such a bibliographical list as I could obtain, which may aid others alike interested in this study in doing a piece of work that ought to be of signal and lasting interest to the throat surgeon as well as the general practitioner.

This can only be done by a systematic and extensive inquiry from the general profession, gathering cases here and there from the experience of private practice, and formulating them.

Such a work would at once be not only valuable, but highly interesting; and it is eminently fitting that this should be engaged in, at no distant day, by the learned body of throat surgeons represented by our Association (this assemblage).

The compilation of the cases of gunshot wounds of the neck involving the larynx and other portions of the air-passages, as well as the upper alimentary tract, found in the "Medical and Surgical History of the War," is a piece of work quite in keeping with the high character of all the other carefully digested records of work done by the army surgeons of the late war; and it is a pleasure to note among the contributors to this department the name of our esteemed colleague, Dr. S. W. Langmaid.

But, for civil surgeons, there should be a collation of cases from private practice covering the entire United States.

The missiles producing wounds in other than army life are of smaller caliber, and it is rather difficult to make a comparative deduction from the army records that would be found useful to us as civil surgeons.

Of some of the consequences of wounds of the larynx, aphonia is, as a matter of course, the most common; also exfoliation of cartilage, persistent fistula, and permanent

distortion of the vocal apparatus. Six of the ten cases detailed in the war record referred to were followed by chronic cough and complete loss of voice, and similar results are described as occurring among those so wounded on the Confederate side.

Of the general report of 4,895 cases of gunshot wound of the neck in the late war, there was a death-rate of fifteen per centum.

But it must be understood that the figures were taken from the casualty lists and regimental field reports as well as returns from base or general hospitals, and thus the excessive mortality is explained, and many cases are included of grave injuries that never came under treatment; and few indeed that probably came under the treatment that the more modern surgery of the throat would afford, since the advances in this department have been greater subsequent than previous to or during the war.

On reference to some of our text-books we find but meager information on the subject. "The danger of such lesions penetrating the larynx," says Gross, "will be particularly great if, as sometimes happens, the opening extends to the vocal cords, as œdema of the glottis will then be almost sure to arise and occasion fatal suffocation.*

Cohen † speaks of the liability, in gunshot wounds, to serious contusion or laceration of the important nerves on the side affected, and ensuing paralysis or spasm of the muscles of the glottis, interfering with respiration.

The case which is here presented to you for your examination is that of a young man, aged eighteen, H. C. D., by occupation a student, who received, accidentally, a gunshot wound in the neck, from a .32 caliber pistol in the hands of a school-mate, on the night of October 29, 1883, at a boarding-school in the State of Delaware.

The ball struck the neck a little anterior to and below the angle of the jaw on the right side, the pistol being held about five feet from the parts, the bullet taking a transversely downward course through the two walls of the larynx, and finally lodging upon the subclavian artery at the opposite side from the point of entrance.

The symptoms arising immediately after the injury were: stinging or burning at the point of entrance of the ball, a sense of fullness in the throat, and a desire to clear it, the latter act being followed by the expectoration of fresh blood; hoarseness at first, which constantly increased until, within a few hours, there was complete aphonia.

This, in brief, was the history of the case up to the time I was called, November 5, 1883, seven days after the reception of the wound, to see him at his school, where he was attended by Dr. Chandler, of Brandywine, and Dr. Draper, of Wilmington, as consultant. With the former I made an examination of the patient. Externally, over the region of the neck, throat, and upper part of the chest, there was swelling with discoloration from extravasated blood; there was also emphysematous crepitation in the cellular tissue of the neck and chest.

There was a look of anxious alarm about the face; respiration nearly normal, but labored about the region of the larynx. Placing the patient carefully in a sitting position, a laryngoscopic examination was attempted, which revealed œdema of the glottis, with evidences of traumatic discoloration of such a

* Read before the American Laryngological Association, May 12, 1884.

† "Medical and Surgical History of the War of the Rebellion," Part I, Surgical Volume, pp. 406, 407.

* "System of Surgery," Gross, vol. ii, p. 383.

† Cohen, "Diseases of the Throat and Nasal Passages," p. 603.

character as to utterly destroy all the anatomical landmarks of the parts; a superficial examination was made for the ball, and a point found on the opposite side, six inches from the point of entrance immediately behind the left clavicle, that was exceedingly tender to the touch. While the ball could not be felt here by mere palpation, I strongly suspected that it was in this immediate locality, and, fearing further delay in its removal might result in secondary hemorrhage, urged an attempt to discover its whereabouts by careful dissection.

This was acceded to by the attending physician and the father of the boy. The patient was prevailed upon to undergo the ordeal without an anesthetic, fearing its use might bring on emesis and precipitate hemorrhage, which it was desirable to avoid. A careful dissection at the point shown by this cicatrix was carried down deeply behind the clavicle, through tissues much swollen and ecchymosed, and predisposed to bleed.

This was done by drawing down the skin and superficial fascia and making the first incision upon the clavicle, then with the handle of the scalpel and a grooved director tearing my way down, carefully exploring as I went.

I was finally rewarded by being able to feel what I supposed to be the missile slipping away into its track at every effort to touch it; but, after further careful dissection, the ball was discovered and laid bare, immediately upon the subclavian artery, where its elevation with each pulsation of the blood-vessel was noted.

The ball was removed, and the wound made for the purpose healed kindly; twenty-one days later the boy had progressed so favorably as to make it desirable to take him to his home near Pittsburgh, stopping *en route* in Philadelphia, November 26, 1883, to enable us to obtain an examination and counsel in the case from our friend Dr. Cohen.

This was done at Dr. Cohen's office, as thoroughly as the case would admit of, the traumatic changes in the larynx being of such a character as to make it impossible to discover the anatomical relations in any degree whatever.

There was complete aphonia, and the caliber of the glottis was probably less than one fourth of its normal size. Dr. Cohen was not of the opinion that the ball had penetrated the laryngeal walls, and further thought that the fixation of the left arytenoid in the position of farthest separation from its fellow was due to inflammatory changes which had taken place after the reception of the wound, and not to lesions caused immediately by the destructive force of the ball.

This was an opinion which he qualified by remarking our palpable inability at this time to make a satisfactory, or, in fact, any examination whatever of the interior of the larynx; stating, very properly, that nothing short of a daily study and observation of the case would lead to a comprehension of the lesion, and that the probable destructive changes which had been wrought rendered a favorable prognosis for recovery of vocal powers almost impossible.

In this opinion I fully concurred. However, three weeks after this consultation, when the tamefaction of the internal parts had subsided sufficiently to bring more of the interior of the larynx into view, I discovered a ragged lesion of the right vocal band near its middle portion, which nearly severed it, and which distinctly marked the entrance of the missile into the larynx, and, at the opposite side, a spot which, upon careful study and observation, plainly showed the point of exit of the ball from the larynx to be just at the lower portion of the ventricle of Morgagni, or immediately above the true vocal band, splitting the band, as it were, at its upper border. The first spot is now marked by a serrated cicatrix in the true vocal cord, and the opposite side is marked by more extensive post-lesional inflammatory changes, still apparent in the image of the larynx.

At this time I thought it expedient to resort to the use of the mild interrupted current, both intra- and extra-laryngeal. After two weeks of daily applications, lasting from three to five minutes, we were rejoiced to get a raucous vocal sound under the stimulus of the battery current.

This, however, was a very uncertain sound, and it was some weeks before there was any sonorous vocalization, excepting under the immediate use of the battery.

About January 1, 1884, there was an intra-laryngeal appearance rudely represented in Fig. 1, with an occasional sonorous note under great effort.

There was ankylosis of the left arytenoid, and no adduction of the left vocal band, excepting a short portion of its anterior end, under the powerful stimulus of the battery current. This ankylosis has gradually yielded to attempted powerful use of the voice, the patient being instructed, after all traumatic inflamma-



FIG. 1.—January 1, 1884.



FIG. 2.—February 1, 1884.

tion had been subdued, to suddenly attempt to shout several times in the day. This gradually loosened the left arytenoid, and it was amusing as well as gratifying to see the first futile attempts at motion in this cartilage, and to notice its slow and almost daily increased motion until, as you will now see, it comes over to nearly its proper place in the vocal effort. The treatment persisted in was essentially a system of vocal gymnastics, with the daily application of the interrupted current, from five to fifteen minutes, only abstaining from its use when there was any evidence of congestion or pain in the larynx.

The vocal powers of this patient have been recovered so far beyond the most sanguine expectations of his physician and family that it presents a tempting field for reasoning as to the structures involved other than the immediate vocal cords themselves. It is true the injuries immediately inflicted upon these bands were not of themselves sufficient to maintain the prolonged adductor paralysis. The course of the ball, fully betrayed by the wounds in the larynx, proves not a matter of any certainty as to the course it pursued in the tissues of the neck on each side of this structure.

The nerves supplying the vocal apparatus are deeply placed in proximity to important blood-vessels.

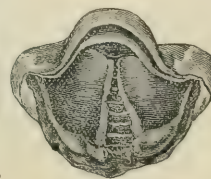


FIG. 3.—March 1, 1884.

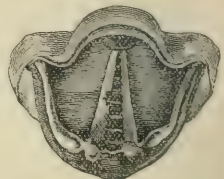


FIG. 4.—April 1, 1884.

That these great blood-vessels were not seriously wounded is quite certain, and that the laryngeal nerves were not

immediately seriously wounded or severed seems almost positive, because the boy spoke after receiving the wound, and the injuries to the nerves were of the nature of contusions, or changes due to traumatic inflammation.

An intra-laryngeal inspection in this case, April 22, 1884 (see Fig. 4), reveals the arytenoid of the left side almost as mobile as its fellow. The epiglottis, which was from the first drawn toward the arytenoid of the left side by reason of contracture of the ary-epiglottic and subjacent tissues, is now symmetrical and almost normal. Upon the right vocal cord, about one half the distance from the anterior end, can be seen what resembles a serration in the free edge of the band.

This serration marks the point of entrance of the missile into the larynx. The left vocal cord is seen to be less mobile, and the free band-like structure is split laterally in its longitudinal axis, so that its measurement, looking from above downward, is four times its normal thickness, especially at that portion next the cartilage.

The ventricle of Morgagni is on this side obliterated by the traumatic distortion, and, indeed, the ventricle is scarcely discernible on the opposite side.

I shall leave any reasoning I might engage in as to the question of concomitant or subsequent lesions in this injury for the discussion by those of my fellows who may feel competent or willing to engage in it. Suffice it for me to say, the boy has regained powers of vocalization, if not equal to what they would have been without the injury (and which I do not assert), yet which are excellent, and ample for nearly all the needs of life other than those of the orator or elocutionist—since in his conversational voice there is little fault that can now be discovered by other than the expert—with a prospect of further intra-laryngeal improvement in the yet somewhat distorted tissues, that gives a reasonable hope of a perfect restoration of all the natural vocal powers of the individual patient.

Dr. Fauvel contributes the following curious case ("Revue mens. de laryngol.," October, 1881):

The patient, ten years before, had received a gunshot wound under the left eye, and medical opinion was divided as to whether the bullet had remained in the head or not. For three months pus and small pieces of bone were discharged through the mouth.

The man had since suffered, at frequent intervals, from acute pain in the head and jaws, and his general health was impaired.

Seven months ago he first felt pain in the throat and in the jaw near the temporo-maxillary articulation and left ear, with pricking sensations, which he compared to a needle plunged in the ear.

Later on the same pricking sensations and pain were felt in the left side of the larynx. There were expectoration of blood, cough, hoarseness, trouble in swallowing, and, finally, aphonia.

Liquids could scarcely pass.

At this crisis laryngoscopic examination was made, and a dark, irregular, lobulated, fungating-looking mass was discovered, filling up the left half of the glottis and concealing the greater part of the left vocal cord.

The other parts of the throat were normal. The tumor most resembled a melanotic growth; but, in consideration of the rarity of such growths in this situation, it was thought

rather that the patient was suffering from the ulcerative stage of laryngeal phthisis. But afterward, as the tumor increased in size and seemed very firm and resisting to the touch, it was diagnosed as osteoma, and its extraction decided on.

Attempts that were made to remove it were not at first successful. The patient passed the night in coughing and vomiting, and, during a fit more violent than the rest, expelled a hard, heavy body, which proved to be a bullet. From this date the patient recovered his voice, and all pain and trouble in swallowing disappeared. Nothing could be seen of the tumor except the slight scar where the bullet had passed through.

On rhinoscopic examination, some small perforations in the upper part of the naso-pharynx were discovered.

Dr. Fauvel, after remarking upon the difficulty attaching to the diagnosis of this case, says that it is equally difficult to explain the manner in which the ball passed downward into the larynx.

He suggests that, having entered apparently below the malar bone, the bullet penetrated obliquely between the ascending ramus of the inferior maxillary and the superior maxillary bone, and became lodged in the basilar process of the occipital bone, in front of the vertebral column and behind the pharyngeal aponeurosis.

The ball, instead of becoming encysted, was probably set free by the surrounding bone becoming necrosed, which would account for the discharge of the pus and spiculae of bone, and the perforations in the naso-pharynx, afterward seen by the rhinoscope.

Yielding to the force of gravity, it then slowly descended in front and to the left of the vertebral column, being concealed from view, first, by the veil of the palate, and afterward by the posterior pillars of the fauces.

When it reached the base of the tongue it changed its direction, and, passing forward and downward, became lodged in the left ary-epiglottidean fold.

Dr. Langmaid writes, April 25, 1884, concerning the soldier Young, whose case is reported in the "Medical and Surgical History of the War," that the patient still wears a trachea tube, and has scarcely any inconvenience from it. He says: "I have examined his throat from time to time; the vocal cords are concealed by a valvular tumor, the base of which presumably occupies the situation of the original wounds, and is, I suppose, the result of an inward prolongation of granulations."

I say valvular tumor, for its action is like that of a pump-valve. Inspiration through the mouth is impossible, but expiration (the external opening of the fenestrated tube being closed by the finger) raises the tumor, and the voice-sounds are easily produced.

Any operative interference with the tumor intra- or extra-laryngeal is firmly refused.

Dr. Samuel Johnston, of Baltimore, sends me a clipping from one of the Baltimore daily papers, of April 21, 1884, which mentions a case of a terrible wound of the neck and throat received by Count von Boreke at Aldie; this officer was once on the staff of Stuart's cavalry in Virginia.

The necessary particulars for our purpose in this case being wanting, I merely mention it as a matter of record for future use if needed.

From Dr. Thomas F. Rumbold I get the following:

"A. M. Groves received a gunshot wound through the larynx December 15, 1879. The missile (a duck-shot, probably No. 4) entered the left side, about one inch posterior to the pomum Adami, passing horizontally and laterally through the larynx, wounding both vocal cords."

The doctor saw the case about seventeen days after the wound was received; the parts were healed, but the marks of the missile were yet perceptible.

The vocal effort, which became aphonic at once after the wound, was, at the doctor's first examination, described as "squeaky." The case was only seen once, and was not made the subject of treatment.

There can be little doubt, however, that the interrupted current would have been beneficial.

Dr. R. B. Tauber, of Cincinnati, kindly sends me the following notes:

"J. S., aged forty-six, was shot in the neck while on a steamboat during the late war; the ball could not be discovered. He complained of dysphagia, was aphonic, and had slight shortness of breath. For twelve years the bullet lodged in his larynx; at the end of that time he consulted me, and, on making a laryngoscopic examination, I found the space of the left sinus pyriformis entirely covered over. I introduced the laryngeal sound, and found the bullet in this cavity lodged very tightly. I removed it, and found it to be a conical .25 caliber, and half an inch long."

The patient measurably regained his voice afterward, and was otherwise relieved of his distressing symptoms.

The voice, however, was described as being imperfect, or, in the language of the doctor, a "monotonous voice."

This case has a striking likeness in its character to the one so graphically detailed by Fauvel, and is worthy of being recorded in its company, deserving a decidedly more extended record:

The second case, given me so courteously by Dr. Tauber, is that of H. L., aged thirty, married, who had syphilis eight years before he was shot in the neck. The bullet entered the right side, under the angle of the inferior maxilla, passed through the epiglottis, injured both arytenoids, and made its exit opposite on the left side, about the sterno-cleido-mastoid muscle. The patient had great dysphagia and dyspnoea; voice not above a whisper; food regurgitated; breath very offensive. Laryngoscopically, the entire larynx was deep-red and congested. Three fourths of the epiglottis were gone, and only a small red stump left. Both arytenoids are at the present time enormously hypertrophied; the stump of the epiglottis has healed. The vocal cords are thickened and reddened, though the patient has regained his voice, and is an expert at swallowing food, which seldom enters the larynx.

My friend Dr. D. N. Rankin kindly reports the case of John Horner, aged twenty-three, soldier in the late war, who was under his care while serving as assistant surgeon in the army:

This man received a gunshot wound, involving the upper part of the larynx, while on picket-duty. The ball entered at the malar process of the right side of the face and passed downward and backward, wounding the nasal passages, tongue, oesophagus, and larynx, making its exit at a point about two and a half inches below the angle of the left inferior maxillary bone.

The patient was nourished by means of the stomach-tube, and finally recovered, with good powers of deglutition and vocalization.

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SCHNITZLER. "On Hæmorrhage from and Laceration of the Vocal Cords," "Wiener med. Presse," 1880, No. 3, pp. 38, 41.

DISCUSSION.

Dr. COHEN.—I have had recent occasion to study the subject of gunshot wounds of the larynx, and have been astonished to find how rare they are in military practice. With regard to the case reported by Dr. Daly, which by that gentleman's kindness I have had the opportunity of examining, I was unable at the time to believe that the ball had traversed the larynx, but thought that it had been deflected around the larynx and had then passed to the point from which it was removed. The missile must have made quite an acute turn to reach that spot after traversing the larynx. The laryngoscopic inspection made by me revealed a larynx much congested and considerably distorted, while the left vocal band was fixed. In view of the subsequent history of the case, as presented in Dr. Daly's report, I am prepared to admit that my former opinion—that the ball had not penetrated the larynx—was an incorrect one.

Dr. LEFFERTS.—There is a specimen of gunshot wound of the larynx in my collection, in the Museum of the College of Physicians and Surgeons, but, unfortunately, without a history. It illustrates a point alluded to by one of the speakers—viz., that a clean-entrance wound could be made through the thyroid cartilage without stellar fracture of that plate. There is in the specimen no wound of exit, the tissues in the interior of the larynx are torn and displaced, and the presence of a tracheotomy incision would show that the ball had remained in the larynx and necessitated tracheotomy for dyspnoea.

Dr. LANGMAID.—With regard to the case under my care, to which Dr. Daly referred, the patient has worn the tube since 1860, and I would modify the statement quoted in one regard: that, if one has to wear the tube a long time, the greatest care should be exercised in its construction. On two occasions this man has suffered difficulty from oxidation of the tube. On one occasion he came from New Brunswick to me at Boston, holding on to the end of a silk thread caught on one portion of the tube, which by oxidation had become severed from the remainder and had fallen into the air-passage. He had made this long journey being in constant fear lest the piece of silk should lose its hold and the portion of the tube fall down the

trachea and block the passage to the lungs. With regard to the shape of the tumor, it is such as to press upon the glottis and act as a kind of valve, and interfere with speech in such a way that the patient seeks relief in conversation by raising the hand to the larynx and making pressure. Fortunately, the tube was inserted low in the trachea.

Dr. Asch.—Cases of gunshot wound of the larynx are extremely rare. I served as a medical officer in the United States Army for twelve years, and acted as Medical Inspector of the Army of the Potomac during the Wilderness campaign of 1864, and no cases of gunshot wound of the larynx occurred in my sphere of duty.

THE ARCHITECTURE OF THE SPINAL CORD, AND ITS RELATIONS TO MEDICINE.

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(Continued from page 600.)

From the gray matter of the cord, bundles may be seen to jut out into the lateral column of either side between the

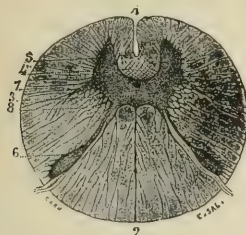


FIG. 10.—SECTION OF THE CORD BELOW THE MEDULLA OBLONGATA. (Sappey.)

1, anterior fissure; 2, posterior median fissure; 3, gray commissure, much thicker here than lower down; 4, white commissure formed by the decussation of the anterior columns; 5, anterior cornu; 6, posterior cornu; 7, lateral cornu.

anterior and posterior horns. These are commonly designated as the "reticular processes" (*process of Lenhossek*). They do not apparently reach the periphery of the cord, as those that are prolonged into the anterior nerve-roots do.

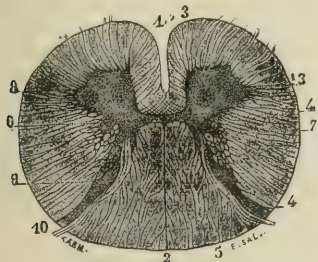


FIG. 11.—SECTION OF THE CERVICAL ENLARGEMENT OF THE CORD. (Sappey.)

1, anterior fissure; 2, posterior fissure; 3, 3, anterior columns of most authors; 4, 4, lateral columns (these columns in reality pass beyond the anterior cornu, and the anterior columns occupy less space than is here allowed them); 5, posterior columns; 6, posterior commissure (here very narrow); 7, reticulated arrangement of the gray and white matter at the junction of the two cornu; 8, anterior cornu, in which the multipolar cells are distributed into three principal groups; 9, posterior cornu; 10, fifth pair of cervical nerves.

It is probable that some of them contain fibers that connect the vesicular column of Clarke with the direct cerebellar column (see Fig. 21).

Passing through the center of the gray commissure, and extending for the greater portion of the length of the cord, may be seen a small canal—the *central canal of the spinal cord*.* The shape of the central canal of the cord varies in cross-sections made at different levels. In the cervical segments it is oval, in the dorsal circular, and in the lower segments heart-shaped or T-shaped. Its transverse diameter is greater in the cervical and lumbar enlargements than elsewhere. That portion of the gray commissure which lies in front of this canal is sometimes called the "anterior gray commissure," while the portion which lies behind it is called the "posterior gray commissure." In front of the

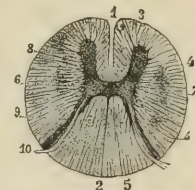


FIG. 12.—SECTION FROM THE DORSAL REGION OF THE CORD. (Sappey.)

1, anterior fissure; 2, posterior fissure; 3, anterior column situated within the corresponding cornu, and decussating in the median line with the column of the opposite side; 4, 4, lateral column reaching to the anterior column, but separated from it by no distinct line of demarcation; 5, posterior column; 6, 7, section of the columns of Clarke, situated at the two extremities of the gray commissure, at the junction of the anterior and posterior cornu, and containing large multipolar cells; 8, anterior cornu; 9, posterior cornu; 10, posterior root of dorsal nerves.

gray commissure a band of white nerve substance connects the two lateral halves of the cord, to which the term "ante-

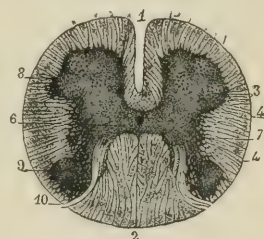


FIG. 13.—SECTION OF THE LUMBAR ENLARGEMENT OF THE CORD. (Sappey.)

1, anterior fissure; 2, posterior fissure; 3, 3, anterior columns of most authors; 4, 4, lateral columns of most authors; 5, posterior column; 6, gray commissure and central canal, and, to the right and left of the latter, the orifices of two longitudinal veins; 7, reticulated arrangement of white and gray matter; 8, anterior cornu; 9, posterior cornu; 10, posterior root of the lumbar nerves.

rior" or "white commissure" is applied. In the cervical segments of the cord the white commissure is thicker than

* This canal is continuous, above, with the *fourth ventricle* of the brain; and the aqueduct of Sylvius is considered by some anatomists as a continuation of it above the fourth ventricle. It presents a pouch, the "ventriculus terminalis" of Krause, at the lower extremity of the cord. Below this pouch it diminishes in caliber and is prolonged into the "flum terminale." It is lined with epithelium throughout.

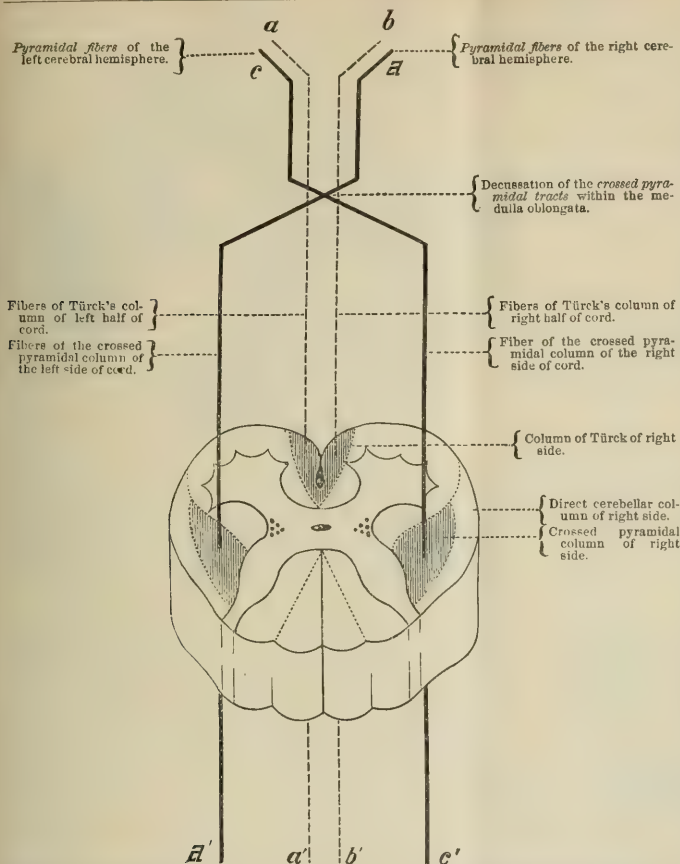


FIG. 15.—A DIAGRAM DESIGNED BY THE AUTHOR TO SHOW THE AREAS OF THE CROSSED AND DIRECT AND CROSSED PYRAMIDAL TRACTS IN A SECTION OF THE SPINAL CORD, AND THE FIBERS THAT COMPOSE EACH. *a* and *c*, the pyramidal (motor) fibers going from the left cerebral hemisphere to the spinal cord; *b* and *d*, the same of the right cerebral hemisphere.

smaller from above downward, until at last Türk's columns disappear entirely.

The crossed pyramidal column varies in position as well as in size in the different segments of the cord. In the cervical enlargement it occupies a large triangular area in the posterior half of the lateral column, but it does not reach the surface of the cord, nor does it come into contact with the gray matter. It diminishes in size as it passes downward, and ends in the lumbar enlargement, where it reaches the periphery of the cord. It is unquestionably the *great path for all voluntary motor impulses* which are sent out from the brain to the extremities or trunk.

The ANTERIOR ROOT-ZONE is that part of the anterior column which is not occupied by the direct pyramidal fibers or Türk's column. It seems to be composed of fibers which enter the anterior roots of the spinal nerves, and possibly also of commissural fibers that serve to connect the anterior horns of the different segments of the cord.

THE LATERAL COLUMN of each side (exclusive of the crossed pyramidal tract and the direct cerebellar column) is not yet well understood as regards its construction or functions. It contains vaso-motor fibers, and possibly acts as a tract of sensory conduction (Fig. 14).

THE DIRECT CEREBELLAR COLUMN first appears in the upper part of the lumbar enlargement of the spinal cord and increases in size as it passes upward toward the brain. It seems to receive fibers which pass from a group of cells, called Clarke's vesicular column (Fig. 22). The fibers of which it is composed are now believed to pass to the cerebellum directly, i. e., without the intervention of any nodal masses of gray matter.

THE POSTERO-INTERNAL, or GOLL'S COLUMN, is composed chiefly of fibers derived from the posterior horn of gray matter and the gray commissure. It is probably associated with the *conduction of sensation* upward to the brain.

THE POSTERO-EXTERNAL, or BURDACH'S COLUMN, is composed of fibers of the posterior roots of the spinal nerves passing inward to join the posterior horn, and also of *commissural fibers* which connect the posterior horns of the various spinal segments.

Much of our knowledge of the course of fibers within the

spinal cord is no longer speculative. Flechsig has shown that definite tracts of fibers within the spinal cord are *developed at different periods*, as the cut introduced clearly demonstrates, and also that the relative proportion of motor fibers within the direct and crossed pyramidal fasciculi varies with individuals.

We know also that *secondary degeneration* of nerve-tracts occurs when they are *cut off from their so-called "trophic centers"* by traumatism or disease-processes. This degeneration always progresses in the *direction of the currents that are conveyed by the fibers* whose nutrition is affected; hence it progresses downward in the motor tracts and upward in the sensory tracts. Finally, experimental physiology has now determined many facts with an approach to accuracy that were long in dispute, and has thus aided us in properly interpreting symptoms referable to spinal disease. We are now enabled to state positively that the "columns of Goll and Burdach," as well as the "direct cerebel-

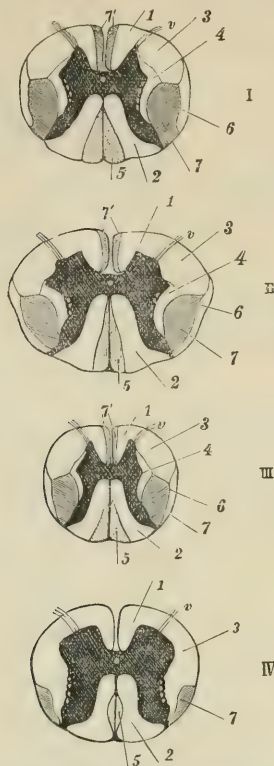


FIG. 16.—A DIAGRAM ILLUSTRATING THE DEVELOPMENT OF THE DIFFERENT SYSTEMS OF FIBERS IN THE SPINAL CORD. (Flechsig.)

I, section at level of 3d cervical nerves; II, at level of 5th cervical; III, at level of 6th dorsal; IV, at level of 4th lumbar nerves.

1, principal mass of anterior columns; 2, Burdach's columns; 3, lateral columns; 4, lateral boundary of gray substance; 5, columns of Goll; 6, direct cerebellar columns; 7, crossed pyramidal columns; 7', Türk's columns; v, anterior roots.

Note that Türk's columns disappear in IV; that Goll's columns increase in size from below upward; that the direct cerebellar columns appear in III, and increase in size in II and I; that the crossed pyramidal columns reach the surface in IV; and that the shape of the gray substance differs in all the sections.

lar column," conduct centripetal or sensory impulses, while the "columns of Türk" and the "crossed pyramidal tracts" conduct centrifugal or motor impulses. Some portions of the spinal cord are, however, still in dispute, because their special functions are not as yet definitely ascertained.

The cut of Flechsig's now introduced will enable you to grasp the general direction and distribution of some of the fibers of the spinal cord. It shows (1) the cut ends of the fibers which make up the mass of the various columns, and (2) the course pursued by the motor and sensory fibers which join the cord at the level of the section. Although this cut is purely diagrammatic, it is admirably devised to bring out certain salient points in spinal architecture, to which reference will be made hereafter. The descriptive text of the cut will render it intelligible to the reader.

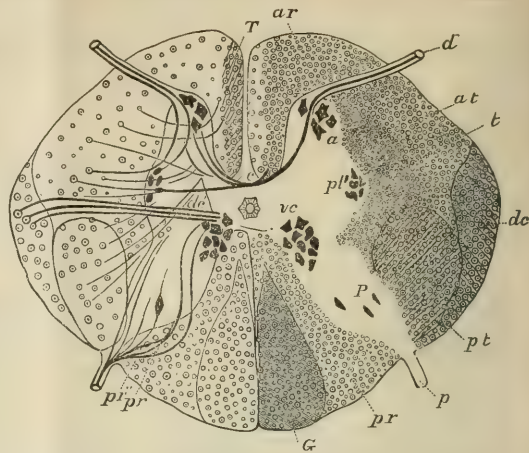


FIG. 17.—DIAGRAM OF A TRANSVERSE SECTION OF SPINAL CORD IN UPPER HALF OF DORSAL REGION. (Flechsig.)

c, anterior commissure; dc, fibers which pass from the vesicular column of Clarke (vc) to the direct cerebellar tract; P, posterior horn; Pt, crossed pyramidal column; T, direct pyramidal columns; dr, direct cerebellar tract; ar, internal part of anterior root zone; ar', external part of same; pr, posterior root zone; G, columns of Goll; r, reticular formation of spinal cord; a, anterior horns.

FUNCTIONS OF THE SPINAL CORD.

These questions may naturally arise in reference to the previous pages: Why is such a digression from previously accepted terms so universally used, in preference to those more familiar and, possibly, simpler terms of nomenclature? Why should the columns of Türk, Goll, and Burdach be separated from each other when no anatomical line of division seems to have been created? Is the arrangement not a strained attempt to mystify and confuse the medical reader, and does a sufficient ground exist for so great a departure from previous methods of description? In reply to such anticipated questions—and they have been asked of me many times—I would respectfully draw your attention to such points in the physiology and pathology of the spinal cord as will help to show the necessity which existed for such modifications of previously familiar terms, as well as the advantages which are gained by those subdivisions of the cord which are accepted by every specialist on nervous diseases.

In order to properly appreciate many of its functions, the spinal cord must be regarded as a mass of *superimposed segments united together*, rather than as an individual whole. Each spinal segment consists of a disc of the spinal cord with one pair of spinal nerves attached. Such a segment is, to all intents and purposes, an independent structure under certain circumstances. The following diagram will illustrate the construction of a spinal segment.

It will be perceived that each disc of the spinal cord has attached to it one pair of spinal nerves. These arise from it by an anterior or motor, and a posterior or sensory root. Upon the latter is a *ganglionic enlargement*, as is usually the case with all nerves that are sensory in function. It will be seen that the two roots unite to form a so-called spinal

nerve; hence every spinal nerve possesses motor and sensory fibers. Some sympathetic or vaso-motor fibers are also present in spinal nerves. These are not shown in the diagram. Each spinal segment is connected by means of its nerves with

necting links between different segments along the chain. The admirable diagram of Bramwell, which I have modified, illustrate many points in the physiology of the spinal cord better than a long verbal description.

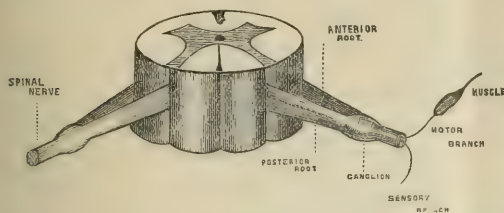


FIG. 18.—DIAGRAM OF A SPINAL SEGMENT, DESIGNED BY THE AUTHOR TO SHOW ITS COMPONENT PARTS.

definite areas of the body. It is capable of receiving sensory impressions from these areas by means of its posterior roots, and of transmitting motor impulses to them in return by means of its anterior roots. The gray matter of the spinal segment, by means of the nerve-cells imbedded within it, can therefore be, under some circumstances, an agent of automatic reflex movement in response to some sensory impression received from without (Fig. 19).

It often becomes necessary, when disease of the spinal cord is suspected, to test the excitability of the different segments of the cord separately, either by stimulation of the skin of different regions or by increasing the tension of certain muscles by a blow upon their tendons, after they have been partially put upon the stretch. The muscular reactions that ensue are known as the "superficial" or "skin-reflexes," and the "deep" or "tendon-reflexes." They will be discussed hereafter.

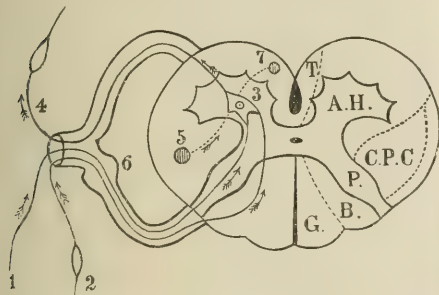


FIG. 19.—A DIAGRAM DESIGNED BY THE AUTHOR TO ILLUSTRATE THE CIRCLE OF REFLEX ACTION IN A SPINAL SEGMENT. (Modified from Bramwell.)

1, sensory fibers from skin, tendons, joints, etc.; 2, sensory fibers from muscles; 3, motor cell of anterior horn of spinal gray matter (A.H.), joining with 1 and 2; 4, motor fibers given off from 3, and escaping by anterior root to supply the muscles; 5, fiber joining ganglionic cell 3, with the crossed pyramidal tract (P.C.P.) coming from the brain; 6, ganglion on posterior root of spinal nerve; 7, fiber joining 3 with Türek's column (T).

It will be noticed that some sensory fibers (2) reach 3 by passing through Burdach's column (B), while others (1) pass through the posterior horn of gray matter (P) to reach the ganglionic cell (3).

The spinal segments are connected (1) by certain nerve-tracts that pass uninterruptedly to the brain (Fig. 20), and (2) by certain commissural fibers that simply serve as con-

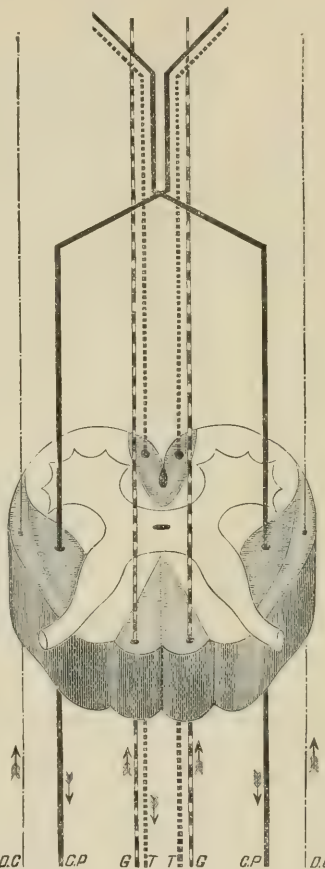


FIG. 20.—A DIAGRAM DESIGNED TO ILLUSTRATE THE PATHS OF MOTOR AND SENSORY CONDUCTION IN THE SPINAL CORD. (Modified from Bramwell.)

D.C., direct cerebellar tracts; C.P., crossed pyramidal tracts; G., sensory tracts of the columns of Goll; T., direct pyramidal tracts, or those of Türek's columns. The arrows show the direction of the conduction, two being centripetal or sensory, and two centrifugal or motor.

(To be concluded.)

THE HISTORIES OF SIX CASES OF OVARIOTOMY.

By GEORGE H. BIXBY, M. D., BOSTON,
FELLOW OF THE AMERICAN GYNÆCOLOGICAL SOCIETY.

CASE I.—December 5, 1881, I was requested by Dr. Henry I. Bowditch to see a patient with him in his office who was suffering from great distension of the abdomen. In order to insure a thorough examination, she was advised to enter the Carney Hospital. Two days later, at the hospital, the following history was elicited: Miss D., aged fifty-seven, a native of Maine, is of

long-lived parentage. The father, whom she resembles, lived to the age of ninety. The mother died of phthisis.

History of Menstruation.—First appearance at sixteen, in normal type; at seventeen she suddenly became stout, but very anæmic, and the menses failed to appear for three successive months. A vigorous tonic treatment in the course of time was followed by a dissipation of the unnatural flesh, the return of the menses, and a complete restoration of the general health. Menstrual life ever after and the climacteric at forty-nine were free from complication. Since her thirtieth year she has lived in the extreme West. There she had typhoid and afterward intermittent fever. For some years past she has resided in the territory of Montana.

At the age of forty-two, on one occasion while bathing, her attention was suddenly directed to a firm, smooth growth in the left ovarian region, of the size of the palm of the hand. She paid no attention to it, and a few weeks later was unable to find it. In her fifty-fifth year the abdomen commenced gradually to enlarge, and, eight months later, materially interfered with respiration and locomotion.

The case was correctly diagnosed by her family physician, Dr. Chalmers, of Ogden, who advised her to return home and seek relief.

November 15th she left Montana for Boston, arriving on the 28th, having traveled thirteen days in coaches and steam-cars without reclining. During this extraordinary journey she partook of only three full meals. This abstinence was necessary in order to control the constant tendency to emesis, caused by the upward pressure of the enormously distended abdomen. Her diet consisted of tea, milk, and fruit. Notwithstanding this remarkable experience, she arrived in Boston a little fatigued, but without injury. At present, a week after her arrival, having fully recuperated, she seems to be in the enjoyment of excellent general health.

Inspection.—The patient is a brunette, above the average stature, with prominent features, a countenance suggestive of firmness, endurance, and a wiry temperament. There is general emaciation, especially of the chest and superior extremities. Abdomen largely distended.

Palpation.—Girth of abdomen at umbilicus, forty-one inches. Percussion elicits universal dullness anteriorly, of which the wave is unbroken, clearness in both flanks, and a solid mass in the left ovarian region, of the size of a fetal head.

Diagnosis.—Cystic degeneration of the left ovary.

Dr. Gilman Kimball, of Lowell, kindly examined the case, and confirmed my views. An operation was advised, and at once accepted. From the foregoing history I felt justified in predicting a favorable prognosis.

January 16th.—Four weeks and two days since her departure from Montana, eighteen days after her arrival, one week in hospital, without any special preparation except an enema the night before, and also half an hour previous to the operation, in the presence of Dr. G. Kimball, of Lowell, Dr. Henry I. Bowditch, Dr. Lyman, Dr. Weston, Dr. Bundy, and Dr. Woodworth, of Boston, and with the assistance of Dr. Bundy, and Mr. H. W. Boutwell, and Mr. C. W. Sparhawk, internes of the hospital, and members of the Harvard Medical School, the operation was undertaken with strict antiseptic precautions. Strength of spray, one to sixty. The latest modification of the Crosby bed, furnished me by Messrs. Codman and Shurtleff, was employed as an operating-table. Length of incision, six inches. There were slight adhesions anteriorly, apparently recent. The tumor consisted of a large central monocyst, inclosing a solid multilocular mass, in the left ovarian region.

The pedicle, of medium length, was transfixed with a needle armed with a ligature of stout English braided silk, each part tied

separately, the ligatures being passed around the whole, and with much force tied a second time, then seared, and finally dropped into the pelvis. The wound, closed with seven silver sutures, was antiseptically dressed, and the patient left indefinitely, as is my custom, on the operating-bed. Weight of cyst and contents, seventy pounds.

Subsequent History.—Briefly: from the first to the sixth day average pulse 100, temperature 99° F. From the sixth to the tenth day, pulse 100, temperature 98°. From the tenth, and after, normal pulse and temperature.

The following points are worthy of separate mention:

1. Urine voided voluntarily from choice from the first day.
2. Fourth day, natural and painless dejections, and ever after with the occasional aid of an enema.
3. Seventh day, removal of stitches; wound healed by first intention.
4. Fourteenth day, removed from the operating-bed and the room. The change might have been made as early as the eighth day.
5. Sat up two hours without discomfort on the nineteenth; walked about her apartment on the twenty-first; was discharged on the twenty-fourth day.

CASE II.—Miss F., aged twenty-eight, a native of New Bedford, consulted me December 28, 1881, for an enlargement of the abdomen. Her father and sister died of phthisis. Her mother, whom she resembles, still lives in the enjoyment of good health. Since her fifteenth year she has worked more or less in a cotton factory, where her labor required much lifting. The catamenia first appeared at sixteen in normal type, three to four days' duration. The function continued normal, and her health was excellent until the twenty-second year, when, no doubt from overwork and confinement in the vitiated atmosphere of the mill, she became debilitated, anæmic, and generally bloated. The menses failed to appear for eight weeks. After a few weeks of tonic treatment her health commenced to improve, and in due time the catamenia returned and she was fully restored to health. This favorable condition of affairs continued three years and a half. In her twenty-sixth year the menstrual interval was reduced to two weeks. In the autumn of 1880 the abdomen commenced to enlarge gradually until June, 1881, when the distension was so great as to interfere with both respiration and locomotion. About this time her family physician, Dr. George T. Hough, of New Bedford, pronounced the case ovarian, tapped, and entirely emptied the cyst.

The beneficial result was soon manifest by improved appetite and digestion, a return of the interval of menstruation to normal, and a corresponding effect upon the general health.

The tumor gradually refilled. At present the abdomen is distended to its utmost capacity.

Inspection.—The patient is a blonde, below the average stature, with an unusually bright and cheerful countenance. There is general emaciation; the girth of the abdomen at the umbilicus is thirty-six inches; percussion elicited dullness anteriorly, with signs of fluctuation with an unbroken wave. In the left ovarian region a smooth, solid mass, of the size of a fist, is easily felt.

Diagnosis.—Cystic degeneration of the left ovary. Operation advised.

The operation was appointed for the 3d, but had to be postponed one week. If the calculation were accurate, this would bring the next menstruation to within less than a week of the operation. As her condition would admit of no further delay, this fact was not considered a bar to immediate operative procedure.

Accordingly, January 10th, without any special preparation, save a laxative the night before and an enema the morning of the operation, in the presence of Dr. Kimball, of Lowell, Dr. S. G. Dearborn, of Nashua, N. H., Dr. Bundy, Dr. Weston, Dr. Woodworth, and Dr. Doble, of Boston, and Mr. H. W. Boutwell, of the Harvard Medical School, interne at the hospital, the operation was undertaken with strict antiseptic precautions. Strength of spray, one to sixty. Length of incision, five inches. There were no adhesions. The tumor consisted of a central monocyte, with a semi-solid mass inclosed, the latter situated in the left ovarian region. Weight of tumor, fifty pounds. The pedicle, of medium length, was unusually broad, and, with the subjacent tissue, uterus, etc., presented unusual vascularity. An attempt was made to enucleate a portion or all of it, but was abandoned on account of the hemorrhage which followed before proceeding very far, but enough had been done to convert the original pedicle into two distinct portions, each of which was transfixed, separately ligated, seared with a black-hot cautery-iron, and dropped. The wound was closed with seven silver sutures and dressed antiseptically, and the patient, like the last, left indefinitely on the operating-bed.

Subsequent History.—January 10th.—Operation ended at 1 P. M. Shortly after recovery from the effects of ether a decided tendency to nausea was controlled by vigorous fanning; 6 P. M., pulse 120, temperature 101° F.; return of nausea; partially controlled by fanning, hypodermic injection, and mustard to the epigastrium.

11th, 9 A. M.—Nausea continued, and occasional vomiting during the night; pulse 110, temperature 100° F. 6 P. M., nausea; vomiting entirely controlled by hypodermic injection and a suppository of opium and belladonna, and absolute rest given to the stomach. Thus far no nourishment by the mouth. Injections of beef-tea and brandy every four hours. Restless, but stomach at rest.

12th, 9 A. M.—Pulse 110, temperature 100° F. 12 M., pulse 120, temperature 100.4° F.

13th, 9 A. M.—Pulse 128, temperature 102.2° F. 12 M., pulse 110, temperature 101° F.; peritonitis suspected; wound and abdomen examined; no signs discovered; menses appeared; cause of rise of temperature accounted for; the catamenia continued four days, during which the pulse averaged 104, the temperature 99.2° F.; after their cessation the pulse came down to 100, and the temperature to 98° F.

From this time the case proceeded without complication.

Points of Special Interest.—1. The vascular condition of the viscera and the sudden and extraordinary rise of temperature were no doubt owing to the approach of menstruation.

2. An unusually abundant flow of apparently healthy urine from the first.

3. Natural dejections daily after the sixth day.

4. Stitches removed on the seventh day; wound found to have entirely closed by first intention.

5. Removed from operating-bed and room on the eighth day.

6. Sat up on the fourteenth, walked about on the sixteenth day.

7. Twenty-fifth day, discharged; rode fifty miles to her home.

CASE III.—Miss C., aged sixty, a native of Ireland, a cook by occupation, entered the Carney Hospital November 1, 1883. She is a brunette of medium stature, looks feeble and careworn.

Menstruation appeared at fifteen in normal type, with a duration of three days, until the fifty-third year, when the climacteric was reached without complication.

Emaciation is general and extreme. The abdomen, of the size of pregnancy at full term, girth thirty-five inches.

Percussion elicits dullness anteriorly, clearness in both flanks, and marked signs of fluctuation.

She first noticed a swelling in the right ovarian region two years before. Its growth has been gradual but constant.

The case was pronounced ovarian, and a portion of fluid drawn by aspiration confirmed the diagnosis.

The chances for an operation were gladly accepted, and the following preparatory treatment was inaugurated:

Ten grains of the bromide of sodium at night; two drachms of the elixir of the tincture of chloride of iron, with gentian, after meals.

At the end of ten days, the general nervous irritability having fully subsided, the bromide was suspended, and the use of drachm doses of citrate of lithium twice daily for ten days concluded the primary treatment.

November 20th.—Ovariectomy was undertaken under strict antiseptic precautions; strength of spray, one to eighty.

Present and assisting, Dr. W. G. Wheeler, of Chelsea, Dr. Michael Gavin, of Boston, Mr. Devine and Mr. Hall, internes of the hospital.

The primary incision was made in the usual manner, each layer of the abdominal wall divided in turn, until the peritoneum was reached. This membrane was so firmly adherent to the ovarian sac that their separation was impossible, necessitating a large opening through both. Firm and extensive adhesions required the employment of the entire hand within the abdomen.

The cyst was raised, the pedicle ligated, clamped, cauterized, and cut free. The abdominal and pelvic cavities were carefully and thoroughly cleansed (a process requiring at least twenty minutes). The ligatures were cut short, the pedicle was dropped, and the wound was closed by silver sutures and antiseptically dressed.

The operation required an hour and forty minutes. At the close of the operation pulse was 130, temperature 101.4° F.

Directions for the Night.—No nourishment of any sort. Stomach to be allowed absolute rest. Enema of brandy and beef-tea every third hour. Urine to be drawn every fourth hour. Against nausea, subcutaneous injections of morphine and atropine. Mustard to the epigastrium; vigorous fanning; ice-pills. Elevated temperature; ice-cap to head; heat to the extremities.

21st, A. M.—Rested quietly. No sign of nausea. Pulse 130, temperature 101° F.

22d, A. M.—Again a quiet night. Pulse 130, temperature 99° F. At 9 A. M., a teaspoonful of milk, at short intervals, was rejected by the stomach; at the end of three hours without nausea.

23d, A. M.—Quiet night under the influence of subcutaneous injections; milk diet resumed and well borne. A troublesome cough annoys the patient night and day.

24th, A. M.—A comfortable night; cough partially controlled by opium. Some alarm felt in regard to the effects of the coughing upon the healing of the wound.

24th, P. M.—Three uppermost stitches removed. At this part, wound healed by first intention; lower portion open, and emitting a purulent, offensive discharge. Wound dressed antiseptically under spray. Extra precautions taken in swathing and dressings. General condition excellent; urine free; abdomen flat.

Examination of chest shows an abundance of fine moist râles.

25th, A. M.—Respiration much embarrassed. Temperature 100°, pulse 120.

25th, P. M.—Somewhat despondent at times; delirious; tongue coated, but moist.

26th, A. M.—Slight general improvement; wound fast healing. Pulse 118, temperature 99°.

27th, A. M.—Slept well. Temperature 98°, pulse 116.

28th.—Pulse 116, temperature 98°. Cough continues unabated. Brandy enema suspended. One ounce whisky every hour by mouth.

29th, A. M.—General appearance not so favorable. Expectoration very profuse. Whisky and nourishment continued in increasing quantities. Condition of stomach continues excellent; rejects nothing, notwithstanding the large quantities of nourishment and stimulants, and the frequency of their administration.

30th, A. M.—Seems very feeble. A poor night; rested only by repeated use of opium. Cough painfully troublesome, taxing her strength at every attack. Temperature 101°, pulse 120.

December 1st, A. M.—Expectorated, during an attack of coughing, two drachms of fresh blood. Another poor night.

Skin cold and clammy; features pinched.

1st, P. M.—Looks haggard and careworn; cold perspiration covers the entire body. State of depression well-nigh amounting to collapse. Can hardly last till morning. Nourishment and stimulants have been pushed all day by the mouth and by enema, and ordered to be continued with the same vigilance during the approaching night.

2d, A. M.—To our great surprise, the patient is still living, but feeble. Nourishment and stimulants continued and increased. Notwithstanding the feeble condition, the stomach receives and retains everything. Recurrence of the depression at the usual time, not far from 4 p. m., but apparently not quite so profound as last night. Cough continues; wound entirely healed.

3d, A. M.—Has taken a large amount of egg-nog, milk, beef-tea, and stimulants during the night; apparently a little brighter, but still feeble. The stomach still faithful to its duties.

3d, P. M.—A recurrence of the state of depression about the usual time, less severe, and of shorter duration.

4th, A. M.—Unmistakable signs of general improvement. Has had a comfortable night, all things considered.

4th, P. M.—Depression at the usual time, but of much shorter duration; general morale of the patient much improved.

5th, A. M.—Decided improvement. Nourishment and stimulants borne without discomfort. At 4 p. m., scarcely any depression; absence of clammy perspiration; cough persists.

6th, A. M.—Fair night. Improvement without interruption from day to day.

9th.—Sat up an hour.

17th.—Walked across the room.

29th.—Left for home, entirely well as far as the operation was concerned, but with the cough persisting.

January 1st.—Upon an examination at home, it was found, in spite of all precautions, that the incessant coughing had produced a well-marked ventral hernia the size of a small peach, which, however, was easily controlled by a properly fitting abdominal supporter. The cough continued, but with less severity.

Points of Especial Interest.—1. The presence of chronic bronchitis months before the operation, assuming, apparently, an acute form almost immediately after.

2. The remarkable condition of the stomach, notwithstanding the feeble state of the general system, to which condition, together with the vigilance of the internes and the Sister in attendance, the patient owes her life. Ex-

cepting in the collapse of cholera, I have never seen a patient reach so low a state and recover.

CASE IV.—Mrs. B., aged forty-three, native of Nova Scotia, of healthy parentage, consulted me June 21, 1883.

Inspection.—She is a tall, robust person, apparently in the enjoyment of perfect health.

Menses appeared at fourteen with regular type, and a duration of eight to ten days. She has had ten children, two miscarriages. She first noticed a swelling in the left ovarian region two months before.

Palpation.—The abdomen is densely covered with adipose tissue. In the right ovarian region a firm, round, regular, smooth mass of the size of a fetal head is easily made out, pediculated, more or less movable from side to side. There is no evidence of fluctuation, nor does it possess the inelastic feel of a fibroid. Bimanual examination fails to detect any connection of the tumor with the uterus.

Diagnosis reserved. I did not see the patient again until the last of September. A most extraordinary change in her condition had taken place. This noble specimen of a woman, whom I had seen two months before apparently in the enjoyment of perfect health, had emaciated to a degree beyond recognition.

Emaciation is extreme and general. The abdomen the size of pregnancy at term, girt forty-two inches, with decided evidence of fluctuation anteriorly. Cleanness in both flanks.

There is no question as to the cystic nature, and an exploratory incision was advised. Still in doubt, the day before that appointed for the operation I removed by aspiration a portion of the contents. Instead of simple ovarian, the fluid was ascitic, of a dark color, and heavily charged with blood and sediment. This discovery postponed the operation indefinitely.

Dr. W. G. Wheeler saw the patient with me a few days later. We arrived at the conclusion that these rather obscure signs hardly justified the radical operation without first tapping clear down. On the following day I removed by aspiration, from the right side, four quarts of bloody serum. Introducing the needle at the left, a small portion of semi-solid, gelatinous matter was only obtained. No reaction followed the tapping. After three days was allowed to get up. She felt much relieved, and went on very comfortably. Even went out to walk and drive.

After three weeks she showed signs of refilling, and had had several distressed spells. The appearance of the catamenia again postponed the operation. Five days after cessation of the catamenia of three days' duration, it having been conclusively shown that relief was impossible by tapping, an exploratory incision was advised. The preparatory treatment had been concluded before the first postponement.

December 11th she entered the Carney Hospital.

On the 12th, in the presence of Dr. Martin Pierce, of New Bedford, Dr. William G. Wheeler, of Chelsea, Dr. George H. Lyman, Dr. W. C. B. Fifield, Dr. Hugh Ferguson, Dr. McKenzie, Dr. Robert Bell, and Dr. Pebble, of Boston, and Mr. Devine and Mr. Hall, internes of the hospital, an exploratory incision was undertaken under strict antiseptic precautions. Strength of spray, 1 to 80. The incision of four inches came down upon the peritonæum, firmly adherent to the sac. It being impossible to separate them, I proceeded at once to make a large opening, hoping thereby for a rapid and complete evacuation. A small portion only escaped, for the contents were made up of a series of cystic formations, containing colloid matter. With the whole hand and arm within the interior of the cyst, the latter were thoroughly broken up and literally scooped out. The size of the tumor thus diminished would

have enabled its passage through the abdominal incision but for the extensive adhesions which held it firmly *in situ*. By gradual and persistent effort the last attachment was finally reached and separated. The adhesions were nearly all of a chronic character, requiring much force to detach them. They occupied the entire anterior wall as far up as the umbilicus. Sweeping round posteriorly and to the right, they extended as far up as the liver and stomach. This protracted and rather violent procedure, added to the free hemorrhage, made a profound impression upon the patient, manifested by a flagging pulse. By the repeated use of brandy, by enema and hypodermically, and by raising the foot of the bed, she soon rallied, and the operation was proceeded with. At length the cyst was raised up attached to a pedicle of medium length and width. Very near its attachment to the cyst there sprang a peculiar flat growth, apparently cartilaginous in its nature, the size of the palm of the hand, suggestive of malignant disease.

Both were clamped and separately ligated, cut free, and cauterized; ligatures left long. The left ovary was found in a condition of cystic degeneration the size of a fist.

This in turn was clamped, ligated, cauterized, and ligatures left long. Sustaining the three stumps well out of the pelvis by means of the long ligatures, the toilet of the peritonæum was undertaken. The sticky, tenacious nature of the contents bid fair to render the task an endless one. After at least twenty-five minutes of sponging in every possible direction, and finally by filling the abdomen full to overflowing with carbolyzed spring water (completing its evacuation by turning the patient well upon one side), both cavities seemed to be entirely free. The three ligatures were now cut short and the pedicles dropped in turn, the left side first. Five silver sutures closed the wound, which was antiseptically dressed. She rallied soon from ether, but, notwithstanding repeated subcutaneous injections, continued restless and wakeful.

13th, A. M.—Pulse 140, temperature 102°. Has been restless the entire night. Occasional naps from opium. Nervous and apprehensive. A tendency to involuntary eructations of hot, tasteless fluid. Urine scanty. On the whole, a poor night.

14th, 2 A. M.—Found her in a peculiarly excitable state. Pulse very feeble. Perfectly conscious, apparently appreciating the seriousness of her symptoms. At 9 A. M. she rallied somewhat, but was still very feeble. At 3 P. M., quite suddenly, she sank without a struggle. She died from exhaustion, there being no evidence of peritonitis or septicæmia.

Remarks.—The rapid progress, duration being less than seven months, was suggestive of the malignant nature. Menstruation occurred, with a duration of several days, when both ovaries were in a condition of cystic degeneration, the right being entirely disorganized, the left, the size of a fist, still showing portions of normal tissue. Aided by this experience in a similar case, I should be tempted, after confirming the diagnosis by aspiration, even in an early stage, to remove the growth. The earliest symptoms which suggested unfavorable terminations were the wakefulness and restlessness for hours after the operation, and the almost complete suppression of the secretion of the kidneys.

CASE V.—Miss D., aged twenty-five, native of Massachusetts, entered the Carney Hospital, October 29, 1883.

The patient is a brunette, a thin, slender person, below the average stature. Her parents still live. On the mother's side an aunt is supposed to have had cancer of the breast.

Menstruation appeared at sixteen, in normal type, with a duration of six days, with an occasional lengthening of the inter-

val. Two years before she first noticed a swelling in the left ovarian region of the size of an egg.

At present the abdomen is the size of pregnancy at term, girding thirty-five inches.

Percussion elicits dullness over the anterior portion of the abdominal wall, clearness in both flanks, with distinct evidences of fluctuation, with an unbroken wave. As an aid to the diagnosis, I removed by aspiration a portion of the contents, which proved to be ascitic, of a dark-brown color.

Diagnosis reserved. The following is a report of the analysis of the fluid by Dr. Gannet, pathologist of the hospital: "Color red; reaction alkaline; albumin $1\frac{1}{2}$ per cent.; moderate amount of sediment containing cholesterolin-cells; numerous large, degenerated fat-cells. The fluid may in all probability be not ascitic, nothing against ovarian, although not sufficient evidence in other points to say absolutely that it is." This report tended to strengthen my doubts entertained at the time of the aspiration, which were based upon the following experience: Some months before I aspirated, and later made an exploratory incision in a case which proved to be malignant disease, in which the fluid was of precisely the same nature as the case under consideration.

The patient was sixty years old. The discrepancy in the ages of these persons, the unquestionable evidences of the cystic nature in the younger, encouraged me to offer her the chances of an exploratory incision.

She was now placed upon the triple preparatory treatment. The latter concluded November 27th. On the 28th the operation was undertaken under strict antiseptic precautions. Strength of spray, 1 to 80. Present and assisting, Dr. W. G. Wheeler, of Chelsea, Dr. Hugh Doherty, Dr. McKenzie, of Boston, and Mr. Devine and Mr. Hall, internes of the hospital. The primary incision was made in the median line three and a half inches below the umbilicus. On reaching and dividing the peritonæum, a gush of brownish-colored fluid followed, disclosing the characteristic pearl-colored cyst, much to the relief and delight of the gentlemen who had watched the case with so much interest and anxiety. The pedicle was clamped, transfixed, ligated, ligatures left long, the cyst cut free, and stump cauterized. A small amount of ascitic fluid in the pelvis carefully sponged out, the ligatures cut short, the pedicle dropped, five silver sutures closed the wound, and an antiseptic dressing completed the operation.

Directions for the night precisely the same as in the foregoing case.

29th, A. M.—Temperature 100°, pulse 109. Several hours of quiet sleep. Milk taken at 4 A. M., and well borne. Abdomen flat.

December 1st.—Temperature 99°, pulse 108. A quiet night. Milk well borne. No signs of nausea. Urine free and of normal color. 6 P. M., complained of pain in the limbs. 9 P. M., catamenia appeared.

2d, A. M.—Temperature 110°, pulse 99.5. Restful night; menstruation persists; all going well.

3d.—Pulse 110, temperature 99°; urine free; no signs of nausea; menses ceased. Removed two upper sutures; at this point wound healed by first intention, lower portion open and suppurating. Remaining sutures removed. Wound antiseptically dressed twice daily.

4th.—Temperature 99°, pulse 108. Wound still discharging. All going on well; food taken and enjoyed.

5th.—Temperature normal, pulse 105. Wound entirely healed; improvement uninterrupted.

13th.—Stood erect for the first time; had sat up days before. At once complained of pain in left limb. Examination showed that the limb was decidedly larger than the right. Sensitive on pressure; general aspect suggestive of phlebitis. Ordered

permanent rest in bed and anodyne liniment; limb to be wrapped the entire length with a flannel bandage.

20th.—Pain and swelling in limb entirely subsided. Discharged well.

CASE VI.—April 6, 1884, I was called by Dr. W. H. Taylor, of New Bedford, to see Mrs. G., suffering from an abdominal tumor. The patient was twenty-four years of age, a native of England, thirteen years in the country. A sister died of phthisis. At nineteen she commenced work in a cotton factory.

Menstruation appeared at fourteen, with normal type, with a duration of seven days. Married at twenty-two, she gave birth to a child one year later. The labor was followed by post-partum hemorrhage. The child was nursed. The convalescence was of short duration, without complication. She soon resumed her labor in the mill, at the same time nursing her child. Five weeks after confinement she noticed a swelling in the right ovarian region, and declared the abdomen had not fully subsided since the birth of her child. The tumor grew apace; the swelling became general; at present, nine months after the discovery, the abdomen is as large as pregnancy at term.

Inspection.—The patient is a blonde, with a bright, hopeful face; below the average stature.

Palpation.—Girth of abdomen, thirty-six inches; umbilicus protrudes; emaciation is general; at the left there are several round, smooth, solid masses the size of a small peach.

Diagnosis.—Cystic disease of the right ovary; operation advised. As a preliminary step, the child was weaned. As the menses had not appeared since confinement, it was deemed advisable to await the return of the function. In the mean time the usual preparatory treatment was carried out.

April 26th.—Dr. Taylor announced the appearance of the catamenia, and their cessation on the 1st of May. She entered the hospital May 6th, riding fifty-five miles by rail. On the 8th—in the presence of Dr. W. H. Taylor, of New Bedford, Dr. J. G. Pinkham, of Lynn, Dr. W. G. Wheeler, of Chelsea, Dr. S. W. Doris, of Winchester, Dr. Leonard, Dr. Ferguson, Dr. Burrell, Dr. Doherty, of Boston, Mr. Hooker and Mr. Bastow, internes—the operation was commenced under strict antiseptic precautions. Strength of spray, 1 to 80. From the excessive distension of the abdomen and the protrusion of the umbilicus, I had fully expected a gush of ascitic fluid to follow when the abdominal cavity was reached. To our great surprise and satisfaction, the cyst-wall presented immediately.

A few fresh adhesions, occupying a space the size of the hand, yielded to slight force. The cyst was now raised, attached to an unusually long pedicle. The latter necessitated ligation in three distinct parts, and finally all were included with one ligature, making a single pedicle. The unusually brief process of cleansing the peritonæum having been concluded, the wound was closed with five silver sutures and antiseptically dressed.

The subsequent history can be told in comparatively few words.

Up to the third day pulse continued 110, temperature 101°. Urine free and of good color; not the slightest evidence of nausea. At 12 m. of the third day an extraordinary change became evident. Pulse rapidly rose to 130, temperature to 103.4°. Nausea and vomiting ensued, accompanied by repeated defecations. Menstruation occurred on the third day. On the fourth day there was a sudden fall of temperature and pulse—viz.: pulse 110, temperature 101°. From this on improvement was uninterrupted; the sutures were removed on the seventh day. She sat up on the tenth, walked about the apartment on the 13th. Left for home on the 20th, three weeks less one day.

Clinical Reports.

ROOSEVELT HOSPITAL.

CLINICAL REMARKS BY HENRY B. SANDS, M.D.

Pelvic Abscess.

GENTLEMEN: We have no operations to-day as important as those you have witnessed within the past two weeks, but there are one or two interesting cases from which, perhaps, we may derive some profitable instruction.

This patient, a woman aged twenty-six, married, came here a few days ago to be treated for a swelling in the abdomen. Her history is somewhat meager. She has had four children, the last one of which was born seventeen months ago. Her monthly periods have been regular. Five months ago, after lifting some heavy tubs of water, she felt a pain in the hip on her right side, and for a few minutes was unable to walk. Since then the pain has continued, and she has had more or less sweating. She is unable to assign any cause for the symptoms, unless it be an injury produced by the heavy lifting.

As you may see, a prominent swelling occupies the right iliac fossa. This swelling fluctuates, and an exploration, made with an aspirating-needle, has demonstrated the presence of thin, flocculent pus. Beyond this point the case has not been studied; but now, while the patient is under the influence of ether, we will examine her more carefully and thoroughly, and try to ascertain the cause of the abscess. I am able to flex the thigh at the hip joint without any difficulty, except that the limb can not, without undue force, be fully extended; the other movements are unimpeded. I am unable to discover crepitus, which might exist if the abscess were due to morbus coxarius. I have known such cases in which a perforation of the acetabulum has led to the formation of a large pelvic abscess pointing in the iliac region. This tumor seems to fill the iliac fossa and to extend above it, lying between Poupart's ligament and the umbilicus. It is a firm, rather elastic swelling, except at one point, about one inch above Poupart's ligament, where there is distinct fluctuation. This fluctuation is caused by matter, as the exploration has proved. We have, then, a case of abdomino-pelvic abscess, with very thick walls; but the origin of the disease is still uncertain. Yesterday I examined the spinal column, but could not discover any tenderness or projection indicating caries. Introducing my forefinger into the vagina, I find the uterus movable, but displaced toward the left side by the tumor, which can be appreciated as a firm, smooth, and convex mass. No additional information is gained by digital exploration of the rectum. Whether the abscess is idiopathic or is dependent upon caries of the spine or pelvis, or whether, as occasionally happens, it is developed in a malignant growth, can not be determined without a free incision. This, I believe, should be made, in order to check the rapid progress of the abscess which has recently been noticed, as well as to allay the severe pain caused by the tension of the sac.

In opening an abscess by cutting through the anterior abdominal wall, you must proceed with caution, otherwise you will be liable to wound the peritonæum, or even to cause the contents of the abscess to escape into the peritoneal cavity—an accident that might be followed by fatal peritonitis. Often, it is true, the serous membrane is stripped off as the abscess grows, so that there is no risk of wounding it. But, if the peritonæum has not been thus displaced, the accident referred to will be avoided only when adhesion has occurred between the parietal layer and that which covers the abscess. In case the integument is red, shining, and adherent, you may without hesitation

thrust a knife directly into the cavity, and, in withdrawing the instrument, enlarge the opening to the extent you deem requisite. If, however, there are no signs of pointing, you must proceed cautiously, and operate in the same manner as when you tie an artery in continuity, or cut down upon a strangulated hernia. By adopting this method, and carefully recognizing, before dividing them, the several layers composing the abdominal wall, you will generally be able to ascertain whether the peritonæum lies in the track of the knife, and, if so, whether it is adherent or not. When the adhesion is firm, the abscess should be opened; but, if the tissues exhibit little or no evidence of plastic infiltration, and especially if the peritonæum can be raised with a forceps, or made to glide over the abscess-wall, the knife should be laid aside and the completion of the operation postponed to a more favorable period. In many cases the adhesive process is hastened by what has now been done, so that, a few days later, the abscess may be safely opened, unless, as often happens, it ruptures spontaneously, discharging its contents through the wound. Even when caution is observed, however, the peritonæum may be accidentally wounded. In a case in which I once committed this error I seized the peritonæum, which I had only punctured, and closed the opening by a fine silk ligature. No mischief followed the accident, and subsequently the abscess broke in the operation-wound. In another case—also a perityphlitic abscess—which occurred in the practice of one of my friends, a more extensive wound of the peritonæum was made, requiring a suture in order to close it. In this instance, also, no harm was caused by the accident, and a few days afterward the matter was safely evacuated by an incision made at the lower angle of the wound in the abdominal wall. Such cases prove that, even when the peritonæum has been unintentionally divided, no disaster necessarily follows, provided the wound in the serous membrane is carefully closed, either by suture or ligature. But if the operator should be so unfortunate as not to discover his mistake in time, and should proceed to incise the abscess, its contents would almost inevitably enter the peritoneal sac and set up fatal inflammation there.

I have now opened the abscess, and have experienced no difficulty in performing the operation, because I found the tissues infiltrated with plastic material and adherent to the abscess-wall. About six ounces of thin, flocculent pus have been discharged, and, upon introducing my index-finger into the cavity, I discover that its walls are exceedingly thick and uneven, being quite unlike the sac of an ordinary chronic abscess. I am inclined to believe that the essential disease in the present case is a malignant new growth, which has accidentally undergone suppuration, and, as the tumor is extensive and is firmly attached to the pelvis, any attempt to remove it would be injudicious. Nothing remains to be done, therefore, beyond washing out the cavity with a solution of mercuric bichloride (1-1,000), inserting a drain, and applying an absorbent antiseptic dressing. Small fragments of the abscess-wall have been torn off, and will be subjected to microscopic examination, in order to settle the question of diagnosis. Meanwhile, the woman will probably obtain temporary relief, and the burrowing of matter will be arrested.

[NOTE.—The patient was taken to her home a fortnight after the operation, which afforded some relief to pain. The pieces removed from the wall of the abscess were found to have the structure of carcinoma.]

Yellow Fever.—The Paris "Temps" has information of two cases at the mouth of the Gironde. The Surgeon-General of the United States Marine-Hospital Service has news that the disease is no longer epidemic in Rio de Janeiro.

Book Notices.

On Bedside Urine Testing, including Quantitative Albumin and Sugar. By GEORGE OLIVER, M. D. Lond., M. R. C. P. Second Edition. London: H. K. Lewis, 1884. Pp. 128.

The object of this little book is to facilitate the examination of urine at the bedside by means of test-papers which the author has devised, made from ordinary filtering paper charged with solutions of substances which constitute delicate tests—such for example, as picric acid, potassio-mercuric iodide, sodium tungstate, and potassium ferrocyanide for albumin. The design of the book is thoroughly praiseworthy, and we do not doubt that it will prove of great service to the practitioner, especially in the country.

BOOKS AND PAMPHLETS RECEIVED.

Hooper's Physician's Vade Mecum: a Manual of the Principles and Practice of Physic, with an Outline of General Pathology, Therapeutics, and Hygiene. Tenth Edition, revised by William Augustus Gay, M. B. Cantab., F. R. S., etc., and John Harley, M. D. Lond., F. L. S., etc. Vol. II. New York: William Wood & Co., 1884. Pp. 358. [Wood's Library of Standard Medical Authors.]

Education the Means for Unifying the Medical Profession and Strengthening the State Medical Association. By R. A. Kinloch, M. D., President of the South Carolina Medical Association. Delivered at Florence, S. C., April 22, 1884. [Reprint from the "Transactions of the South Carolina Medical Association."]

A New Method of Treating Chronic Glaucoma, based on Recent Researches into its Pathology. By George Lindsay Johnson, M. A., M. B., B. C. Cantab., etc. With Illustrations. London: H. K. Lewis, 1884. Pp. 48.

The Diet Question, giving the Reason Why. By Susanna W. Dods, M. D. New York: Fowler & Wells, 1884. Pp. 99.

Contributions to the Anatomy and Pathology of the Nervous System, based on Researches conducted in the Private Laboratory of E. C. Spitzka, M. D. Series iii, No. 2. Nodular Tumor of the Corpus Callosum. By Francis A. McGuire, M. D., of New York. Pp. 7.

Directions for the Antiseptic Treatment of Wounds, as employed at Professor Billroth's Clinic. Arranged for Students and Physicians, by Dr. Victor R. v. Hacker, Assistant Surgeon at Professor Billroth's Clinic in Vienna. Translated by Frederic W. Taylor, A. B., M. D. Boston: Cupples, Upham & Co., 1884. Pp. 41. [Price, 50 cents.]

Consideraciones sobre la Técnica Histológica Moderna, su Importancia y Aplicaciones. Memoria presentada y leída en la Sección de Histología de la Academia Médico-Quirúrgica Española, en la Sesión Científica celebrada el día 30 de Enero de 1883, por el Académico de Número Doctor Leopoldo Lopez García, Presidente de dicha Sección, etc. Segunda Edición. Madrid: Establecimiento Tipográfico del Hospicio, 1884. Pp. 41. [Price, 1 peseta.]

The Objects of Dermatological Classification, with especial reference to Auspitz's System. By Edward Bennet Bronson, M. D., Professor of Dermatology in the New York Polyclinic. [Reprint from the "Journal of Cutaneous and Venereal Diseases."]

Memoria sulla Cura dello Scollamento della Retina (Iridectomia). Pel Dottore Raffaele Castorani, Professore di Oftalmiatria e Clinica Oculistica nella R. Università di Napoli, etc. [Reprint from the "Resoconto della R. Acc. Medico-Chirurgica di Napoli."]

A Plea for the Treatment of Criminals. By J. S. Wight, M. D., Professor of Operative and Clinical Surgery at the Long Island College Hospital. [Reprint from the "American Journal of Neurology and Psychiatry."]

A Nomenclature of Ophthalmology. By Swan M. Burnett, M. D., Washington, D. C. [Reprint from the "American Journal of Ophthalmology."]

University of the City of New York, Medical Department. Forty-fourth Annual Announcement of Lectures and Catalogue. Session of 1884-'85.

University of Georgetown. Thirty-sixth Annual Announcement of the Medical Department, Washington, D. C. Session of 1884-'85.

Catalogue of the Albany Medical College, Fifty-third Session, 1883-'84, and Announcement for the Session of 1884-'85.

Annual Catalogue of the Albany College of Pharmacy, Department of Pharmacy of Union University, for 1883-'84, and Announcement for the Session of 1884-'85.

Medical College of the State of South Carolina. Fifty-sixth Annual Commencement. Session of 1884-'85.

Correspondence.

LETTER FROM WASHINGTON.

Sanitary Matters in Congress.—The National Museum.—Precautions against the Importation of Diseased Cattle.—Medical Provisions for Seamen.—A New Medical College.—The "Index-Catalogue."

WASHINGTON, July 1, 1884.

SINCE I last wrote you, medical matters in Congress have not been numerous, but have been quite interesting. The House of Representatives has voted the repeal of the National Board of Health, and an appropriation of \$10,000 for the Gulf quarantine at Ship Island. The matter is now before the Senate for final action. The Surgeon-General of the Marine-Hospital Service has asked Congress to appropriate \$7,200 to pay inspectors to be stationed in foreign countries and attached to the consulates where epidemics exist. This action was taken with reference to the probable spread of cholera in France and in Europe generally. The singular subjugation of England by her commercial interests is viewed with alarm at this juncture by sanitarians. No reports of any precautions against the spread of cholera in England have been noted. The joint resolution to print additional copies of the "Medical and Surgical History of the War" and the "Index-Catalogue" has passed both houses, and was finally approved by the President June 20th. The resolution provides for sale of the volumes to the public at cost price, with ten per cent. added. On the same day the President approved the act to authorize the National Academy of Sciences to receive and hold trust funds for the promotion of science and for "other purposes." The "other purposes" seem to provide for such disposition of funds as may be necessary to carry out the will of any donor of funds.

The Treasury Department has issued the following circular in relation to samples of drugs, etc., for the National Museum. This is a notable step, looking toward the perfection of the collection:

"WASHINGTON, D. C., June 21, 1884.

"To Collectors of Customs and others:

"This Department is informed that the United States National Museum at Washington has established a Department of Materia Medica, in which it is proposed to preserve and exhibit specimens of substances

used for medical, surgical, or pharmaceutical purposes, by the people of all countries, whether civilized or savage. The collection now includes more than three thousand specimens.

"It has been suggested that customs officers at the principal ports of entry might properly forward to the Museum, from time to time, small samples of such medicinal products as may be imported, and as they may believe will be of interest to the student or expert.

"In referring to the matter, the director of the National Museum states that its officers would be glad to receive not only specimens of drugs, but also of fibers and textile fabrics, food substances, and, in fact, of any and all of the materials of commerce, it being desirable to have not only typical examples of each kind of object, but examples from each country whence they are imported into the United States.

"The appraising officers are requested to forward to the Museum portions of samples of the character mentioned, which can be spared without great inconvenience and can properly be furnished.

"The Museum, of course, will be required to pay any expense incurred in the transmission of the samples other than that for postage."

The Treasury Department has also issued a new circular in regard to the importation of cattle and the Treasury quarantines. The lines are strongly drawn against the importation of cattle diseases.

The new Merchant Shipping Act, which was approved by the President June 26, 1882, regulates in an effectual manner the shipment and discharge of seamen; it places the power to make regulations for shipping commissioners in the hands of the Secretary of the Treasury. It will now be possible to have a thorough physical examination of the crew before shipment. It prohibits the payment of advance wages, and directs the enlargement of the "slop-chest." It abolishes the Marine-Hospital tax, and provides that the service shall be hereafter supported from the tonnage tax. Altogether the bill is a great advance on the Shipping Act of 1872, which it is designed to supplant.

It is observed that the recent announcement of the Georgetown Medical College provides that an examination in the branches of an English education will be required as a requisite for admission.

A new medical college has been announced, with the following as the faculty: John T. Winter (M. D., Georgetown, 1870), professor of materia medica; Howard H. Barker (M. D., Georgetown, 1870), professor of obstetrics, dean of the faculty; Thomas E. McArdle (M. D., Georgetown, 1879), professor of surgery; Samuel S. Adams (M. D., Georgetown, 1879), professor of the theory and practice of medicine; G. W. Cook, M. D., professor of physiology; and G. William West, M. D., professor of anatomy. M. F. Cuthbert (M. D., Columbian, 1883) was elected professor of chemistry, but it is understood he has declined to serve. The new venture is to be called the Medical Department of the "National University." There has been a law department of this university in existence for some years, but the collegiate and other "departments" only existed on paper in the charter of the institution. The well-known energy of the young men composing the "medical department" is an earnest that they will do much toward bringing up the new college to the high plane occupied by its sister institutions in this city.

It is announced that the fifth volume of the "Index-Catalogue" has been sent to the press. This brings the work down to the word "Heart," and includes all works under that title.

THE TREATMENT OF ASPHYXIA.—Dr. B. Howard, lately repeated in Paris a demonstration that he had given before the Royal Medical and Chirurgical Society, of London, the main point of which was to show the inadequacy of the procedure of dragging the tongue forward, and to prove the complete efficiency of forced extension of the head and neck. The "Progrès Médical" remarks that M. Verneuil recognized the truth of Dr. Howard's statements and the importance of their applications.

THE

NEW YORK MEDICAL JOURNAL,

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FRANK P. FOSTER, M. D.

NEW YORK, SATURDAY, JULY 12, 1884.

THE NEW YORK STATE BOARD OF HEALTH'S MONTHLY BULLETIN.

We have received the first issue, covering the month of May, of a new publication that seems to us likely to prove of great interest and importance to those who have to deal with public health matters in the State of New York. It is entitled the "Monthly Bulletin of the New York State Board of Health," and gives abstracts of the reports of deaths and their causes in the eight districts into which the board has divided the State for the purpose. These districts are as follows: 1. The Maritime District, including the city of New York, together with Long Island, Staten Island, and Westchester County; 2. The Hudson Valley District, comprising all the counties on either side of the river, from Westchester County up to and including Washington County; 3. The Adirondack and Northern District, being the northern section of the State—the counties of Warren, Hamilton, Essex, Clinton, Franklin, St. Lawrence, Jefferson, and Lewis; 4. The Mohawk Valley District, taking in the counties of Schenectady, Schoharie, Montgomery, Fulton, Herkimer, and Oneida; 5. The Southern Tier District, including the seven counties lying along the southern boundary of the State; 6. The East Central District, made up of the counties of Sullivan, Delaware, Otsego, Madison, Chenango, Onondaga, and Cortland; 7. The West Central District, including the counties of Cayuga, Tompkins, Seneca, Schuyler, Ontario, Yates, Livingston, Genesee, and Wyoming; 8. The Lake Ontario and Western District, being the counties of Oswego, Wayne, Monroe, Orleans, Niagara, and Erie.

This division of the State into sanitary districts seems well contrived as regards both geographical features and adaptability to comparisons relating to meteorological and other allied conditions. While this arrangement groups the returns in a convenient and useful way, the condensation of the statistics has not been carried to such an extent as to blot out the individuality of particular localities of any considerable importance, for lists of towns, varying from six to twenty-one in number, are given under the different district headings. Under the head of the Maritime District, for example, we find the following localities mentioned, each with its own returns: New York, Brooklyn, New Lots, New Utrecht, Long Island City, Newtown, Oyster Bay, Hempstead, North Hempstead, Jamaica, Southold, Southampton, Northfield, Yonkers, Westchester, Mount Pleasant, Rye, Sing Sing, and the "rest of the district." The latter phrase closes the sub-headings under each of the district titles, and we presume it covers the sparsely populated districts from which a segregation of the returns would lead to the insertion of figures too small to be of service for statistical purposes.

The tabular statement gives the population of each locality, its total number of deaths, the death-rate, the number of deaths of persons under five years of age, the percentage of such deaths to the whole number, and the various causes of death, as follows: Cerebro-spinal fever, typhus, typhoid fever, malarial diseases, small-pox, scarlet fever, measles, erysipelas, whooping-cough, croup and diphtheria, acute respiratory diseases, consumption, puerperal diseases, diarrhoeal diseases, non-diarrhoeal diseases of the digestive system, diseases of the urinary system, diseases of the circulatory system, diseases of the nervous system, cancer, accidents and violence, old age, and unclassified causes. It speaks well for the carefulness with which the table is made up that we find in a foot-note an explanation of the occurrence of five deaths from "accidents and violence" in the town of Waterford, having a population of only 4,826—the occasion being a boiler explosion. On the other hand, pains have been taken to note the manifest incompleteness of the returns from the large town of Troy.

THE ALBANY MEDICAL COLLEGE.

Among many recent indications of the progressive spirit which actuates the governing body of the Albany Medical College, the graduates of which occupy with credit many positions of honor in the profession throughout the country, some of the most striking are to be found in the report of the proceedings of the eleventh annual meeting of the alumni association, a copy of which has lately reached us. The pamphlet gives abundant evidence of lofty purposes and substantial achievements on the part of the college and on the part of the alumni association. The most noteworthy, perhaps, is the fact that the association has so soon been enabled to follow the example of a like association connected with the College of Physicians and Surgeons in this city, and provide for an annual course of alumni lectures. The first course will be given by an alumnus of the Albany Medical College, Professor William H. Thomson, of the Medical Department of the University of the City of New York. The lectures will be delivered next March, the subject being "The Germ Theory of Disease." We are glad to learn that the expense of the first course has already been provided for, and we feel confident that the committee will encounter no serious difficulty in securing contributions ample to make like provision for succeeding courses.

There was another and an exceptional aspect to this meeting of the alumni association, and one which, however the unthinking may be inclined to dismiss it as being of a sentimental character, seems to us of more hopeful augury for the college than any mere material prosperity, for it argues a heartiness and an *entente* among all connected with the institution more potent than any consideration of policy or enthusiasm, as well as a status of the profession in Albany upon which we may all look with satisfaction. We refer to the tinge of sorrow cast over the whole proceedings by the loss that had been sustained by the faculty and the association during the year in the death of the president of the latter, the late Dr. Mosher. It is not alone in the formal eulogies spoken by Dr. Murray, Mr. McKel-

way, and Dr. Ward that the deep feeling of the meeting is to be perceived; it stands out unmistakably in the brief remarks of welcome made by Professor Perkins in behalf of the faculty. Mr. McKelway's address, coming from a man who not only is not connected with the college, but is not a member of the profession of medicine, was the particular feature to which we have referred as showing an enviable status of the profession with the community in Albany. To appreciate its full significance in this regard, we should remember that but a month had elapsed since the same gentleman paid a most touching tribute to Dr. Mosher, and that without having been set down for any such part, at the annual dinner of the Medical Society of the State of New York; which fact, if any token were needed, goes to show the heartiness that moved him, and incidentally the feelings of a representative layman toward the medical profession of Albany. From all points of view, therefore, the position of the Albany Medical College is one that calls for praise and congratulation.

MINOR PARAGRAPHS.

ALBUMEN AND ALBUMIN.

THE "Medical News," of Philadelphia, discusses the propriety of spelling albumin with an *e* or with an *i* in the final syllable, and concludes that, although uniformity is desirable, there is not "sufficient reason for English writers deviating from the original well-founded spelling of the word" (meaning *albumen*). Were uniformity all that was aimed at by the use of the word albumin, the conclusion reached by the "News" would be more justifiable than it is in view of the actual facts. The simple truth is that albumen (German *Eiweiss*) means white of egg, while albumin has for many years been applied to the proximate principle (German *Eiweissstoff*). If the authors of the "United States Dispensatory" had heeded this distinction, it is not likely that the fifteenth edition of that work would have contained this remarkable sentence, which is to be found on page 1080: "It contains, according to Dr. Bostock, in 100 parts, 85 of water, 12 of pure albumen, 2.7 of uncoagulable matter, and 0.3 of saline substances, including soda with traces of sulphur." In other words, there is only twelve per cent. of albumen in albumin! We confess that the word albumin is of faulty formation; albuminin would be more in accordance with the correct mode of constructing such words, but, unfortunately, albuminin has already been applied to another substance, namely, the material of the cells which inclose the white of an egg. As the matter stands, therefore, to the query, Albumen or albumin? we would answer, Albumen and albumin—the former in pharmacy, when white of egg is meant, and the latter in speaking of what we test for, which certainly is not white of egg.

TWO VIEWS OF THE PROBE.

BEARING in mind the decided views put forward by Dr. Amidon in a paper recently read before the Academy of Medicine, an abstract of which was given in our issue for June 14th, those of our readers who may chance to read Dr. J. M. Keller's presidential address before the Arkansas State Medical Society at its ninth annual meeting will be likely to be struck with the diversity of the sentiments expressed by these two gentlemen. Speaking of the use of the probe in penetrating wounds of the visceral cavities, Dr. Keller says: "Men have learned to know that to pass the probe beyond the chest wall or the abdominal wall with any hope of tracking the missile which has made the

wound, without reproducing the danger, is as absurd and foolish as an undertaking as attempting to find the needle in the straw stack."

NEWS ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending July 8, 1884:

DISEASES.	Week ending July 1.		Week ending July 5.	
	Cases.	Deaths.	Cases.	Deaths.
Typhus	4	0	1	0
Typhoid Fever.....	15	4	9	3
Scarlet Fever.....	38	15	42	13
Cerebro-spinal meningitis. .	3	3	4	4
Measles.....	171	30	171	32
Diphtheria.....	43	23	34	18

The Cholera in Europe.—The Asiatic origin of the epidemic in Toulon and Marseilles is now practically unquestioned, and Dr. Koch is said to have given it as his opinion, based upon a study of the Toulon cases, that it originated in the extreme East. Both the French people and their neighbors have become thoroughly aroused to the danger of the situation, and the general expectation seems to be that the disease will spread over Europe, and probably reach this country before the close of the summer. In consequence of this feeling, there have been some signs of panic in certain parts of France, and the Parisians are reported to have left for the seaside in unexampled numbers. There have been reports of a few cases of cholera in Paris, but thus far none of them have turned out to be genuine. Passengers arriving at Paris from infected places are disinfected before being allowed to enter the city.

At Toulon, the seat of the first outbreak, it is thought that the virulence of the disease has abated somewhat, but that it will persist with a diminishing mortality to the close of the season, causing not more than a thousand deaths in all. Up to the 8th inst. there had been one hundred and fifty-four deaths. On the 6th there were one hundred and thirty patients in the hospitals, most of whom were not considered to be in great danger. Among the victims is a naval surgeon, Dr. Borel.

In Marseilles the outlook seemed more encouraging on the 2d of the month, and it was thought that there would be no occasion to postpone the *fête* of the 14th, in celebration of the fall of the Bastille, but the next day things took an unfavorable turn again, six thousand people were stated to have fled, and the authorities decided to omit the *fête*. According to the dispatches, the next two days were marked by a decided abatement, but on the 6th and 7th of the month there was another decided recrudescence, and it was then found that infected vessels were entering the port. On the 8th the alarm was increasing, and it was stated that nine tenths of the victims were women. On the 9th a number of policemen became frightened and tendered their resignations. They were dismissed the force. There have been rumors of a few cases at Lyons, Nice, and Aix, but they do not seem to have been substantiated.

Stringent precautions against the spread of the disease are being taken all through the south of Europe. Italy guards the French frontier, and stops refugees from Marseilles. Passengers by the Mont Cenis tunnel are detained five days. A dispatch from United States Vice-Consul-General Wood, at Rome, to the State Department, dated July 4th, said: "All vessels to Sicily and Sardinia, ten days' quarantine; to other Italian ports, quarantine from French ports only. General health excellent, but a case of cholera has occurred. It was in quarantine at Piedmont." The Italian Government is reported to have prevented

the Sicilians from refusing a landing to English vessels. According to the Paris "République française" of July 9th, cases of cholera had occurred at Valencia, Barcelona, Rome, Leghorn, and Viterbo, and that paper therefore calls upon the French Government to declare a quarantine of vessels from Spain and Italy. The Spanish quarantine of English vessels is maintained, although the British Government is understood to have protested. At Gibraltar the British forces are said to have compelled the withdrawal of the Spanish sanitary cordon beyond the middle of the neutral ground. Portugal has ordered a quarantine of all English vessels. At Geneva passengers from Toulon and Marseilles are disinfected at the railway station. Notwithstanding all that the English have said against the quarantine policy, a London dispatch dated July 8th states that a tugboat with quarantine officers on board is scouring the English Channel with orders to board vessels bound for Cardiff, especially vessels from France and Spain.

Our own Government is taking proper precautions, and that this course is in the highest degree necessary is shown by the fact that information has been received that great numbers of French refugees are on their way to this country on other than French vessels. The Post-Office Department has asked the British mail officials to separate and disinfect the mails from France by way of Great Britain, but, according to present advice, either the request has been misunderstood or the British authorities do not consider it incumbent on them to comply with it, and therefore arrangements are making to disinfect the mails on this side of the Atlantic. The necessity of personal and municipal sanitation is urged upon the attention of local officials by a circular recently issued by the State Board of Health of New York. The Mexican Government has ordered a quarantine of vessels from France on the Gulf Coast.

Small-pox seems still to be on the increase in London, and the Liverpool correspondent of the "Lancet" expresses the fear that an epidemic of the disease is impending in that city.

The Health of Connecticut.—The State Board of Health's monthly report for May, prepared by the secretary, Dr. C. W. Chamberlain, of Hartford, gives a tabular statement of the deaths from the most noteworthy causes in nine of the large towns of the State, and this is followed by careful and interesting comments upon the returns. It appears that for two or three years past, contrary to the usual state of things, the mortality from pneumonia has been greatest during the month of May, but that the indications are that the excess will be considerably reduced this year, in consequence, as the secretary thinks, of the increased carefulness with which attacks of bronchitis have been met which otherwise would have been likely to develop into broncho-pneumonia. "When pneumonia is prevalent or in season," the secretary adds, "an attack of bronchitis merely, or what appears as such, is not to be despised." Although decreasing, diphtheria still lingers in Hartford, where it caused nine deaths during the month. Except in a few localities, malarial diseases have continued to decrease.

Sanitation in Illinois.—At the regular meeting of the State Board of Health, held at Springfield on the 2d inst., the secretary, Dr. John H. Rauch, presented an elaborate report reciting the transactions of the board during the three months, and discussing the probabilities of the prevalence of cholera and other pestilential diseases in this country during the present year. After the reading of the report, the board adopted the following resolutions:

Resolved, That the importance of the study of practical anatomy, as a foundation for surgical knowledge and skill, demands

that the supply of material for this study be more definitely regulated, and its necessity recognized by law, and that the Illinois State Board of Health respectfully urges the attention of law-makers to these considerations.

Resolved, That the increasing prevalence of small-pox in London and elsewhere, indicating a probable renewal of the epidemic tendency, and its frequent introduction into Illinois from neighboring States within the past few months, make it desirable that vaccinal protection be secured as fully as possible in every portion of the State; and to this end the secretary is hereby authorized to call the attention of the sanitary authorities and others to the subject, and to take the necessary steps to push the further enforcement of the School-Vaccination Order of the board, so that all new scholars, and those who have not heretofore fully complied with its provisions, may be properly protected against small-pox before the advent of cold weather.

Resolved, That, while epidemic cholera may be excluded from this country by thoroughly enforced quarantine regulations, yet the best attainable sanitary condition of every locality in the State should be secured, so that, in the event of Asiatic cholera effecting an entrance, notwithstanding quarantine, the disease may be met and fought under the most favorable circumstances. The secretary is, therefore, hereby authorized to take such action as, in his judgment, will most promptly attain a thorough sanitary organization of the State and the adoption and enforcement of the measures necessary to improve its general sanitary condition.

Epilepsy Mistaken for Hydrophobia.—A man having fallen in an epileptic fit lately, in the region of the Five Points, three policemen, as the story is told in the daily papers, bound him with cords to an awning-post, gagged him, and stood over him with drawn clubs, ready to administer promptly to any symptoms of hydrophobia that he might show on recovering consciousness, they having been told that the man had been bitten by a dog.

Recent Changes in European Faculties.—According to the "Progrès médical," Dr. Rudolf Boehm, director of the Pharmacological Institute of Marburg, has been called to Leipsic as professor of pharmacology and hygiene. Dr. Schauta, extraordinary professor of obstetrics and gynecology at Innspruck, has been made ordinary professor of the same branches. Dr. Le Fort, professor of operative surgery at Paris, has been transferred to the chair of clinical surgery, succeeding M. Gosselin. At the same faculty, the course in medical chemistry, formerly given by the late Professor Wurtz, has been intrusted to M. Hanriot, an *agrégé*. The Prague faculty have resolved to nominate the following candidates to succeed Professor Hasner, retired: Becker, of Heidelberg; Fuchs, of Liège; and Sattler, of Erlangen. Dr. Becker is said to have declared that he will not accept the position unless the ophthalmological clinic is reorganized in conformity with the demands of the present state of science. Only one nomination having been made for the chair of anatomy, the Minister has returned the name of the nominee, Dr. Aeby, of Berne, and directed three nominations to be submitted to him. According to the "Union médicale," M. Duplay, professor of external pathology at the Paris faculty, has been transferred at his own request to the chair of operative surgery, made vacant by the transfer of M. LeFort.

Sanitary Appointments in Paris.—The "Union médicale" announces that M. Brouardel has been nominated president of the consulting committee of hygiene, and M. Berthelot president of the committee on departmental and municipal laboratories, the latter in place of the late M. Wurtz.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from June 29, 1884, to July 5, 1884:*

HARTSUFF, ALBERT, Major and Surgeon (Fort Riley, Kan.).

Granted leave of absence for one month, with permission to apply for one month's extension, to take effect when his services can be spared. Par. 6, S. O. 180, Headquarters Department of the Missouri, June 25, 1884.

MIDDLETON, J. V. D., Major and Surgeon. Ordered to relieve Surgeon B. E. Fryer from duty as post surgeon at Fort Leavenworth, Kan., on or before July 1st. Par. 5, S. O. 183, Headquarters Department of the Missouri, June 28, 1884.

GIBARD, J. B., Captain and Assistant Surgeon. Ordered to relieve Surgeon W. E. Waters from duty as post surgeon at Plattsburg Barracks, Plattsburg, N. Y. Surgeon Waters, upon being relieved, directed to return to his proper station (Madison Barracks, N. Y.). Par. 3, S. O. 181, Headquarters Department of the East, June 30, 1884.

BENHAM, R. B., First Lieutenant and Assistant Surgeon. From Department of Dakota to Department of Texas.

GORGAS, WILLIAM C., First Lieutenant and Assistant Surgeon. From Department of Texas to Department of Dakota. Par. 8, S. O. 150, A. G. O., June 28, 1884.

WALES, PHILIP G., First Lieutenant and Assistant Surgeon. From Old Fort Colville, Washington Territory, to Fort Cœur d'Alene, Idaho. Par. 3, S. O. 89, Headquarters Department of the Columbia, June 23, 1884.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the Navy during the two weeks ending July 5, 1884:*

KNIGHT, J. S., Surgeon. Placed on retired list.

WHITING, R., Passed Assistant Surgeon. Detached from U. S. S. Vermont, and ordered to Marine Rendezvous, New York.

BABIN, H. J., Surgeon. Detached from Marine Rendezvous, New York, and ordered to U. S. S. Minnesota.

WELLS, H. M., Surgeon. Ordered for examination preliminary to promotion.

LUMSDEN, G. P., Passed Assistant Surgeon. Detached from U. S. S. Pensacola, and placed on waiting orders.

WELLS, H. M., Surgeon. Detached from Naval Hospital, Brooklyn, and ordered to U. S. S. Lancaster.

SATRE, J. S. Appointed Assistant Surgeon. Commission dated June 27, 1884.

CORDEIRO, F. J. B. Appointed Assistant Surgeon. Commission dated June 27, 1884.

Society Meetings for the Coming Week:

MONDAY, July 14th: Chicago Medical Society.

TUESDAY, July 15th: American Otological Society (Catskill, N. Y.); Medical Society of the County of Otsego, N. Y. (annual); Ogdensburg, N. Y., Medical Association.

WEDNESDAY, July 16th: American Ophthalmological Society (Catskill, N. Y.—first day); New Jersey Academy of Medicine.

THURSDAY, July 17th: American Ophthalmological Society (second day).

Letters to the Editor.

CELLOIDIN AS AN IMBEDDING MASS.

137 EAST FIFTIETH STREET, NEW YORK, July 5, 1884.

To the Editor of the *New York Medical Journal*:

SIR: I would like to ask, through your journal, what the nature of the objection is, to which Dr. Freeborn alludes in

cautioning those employing celloidin as an imbedding agent, against the use of absolute alcohol and oil of cloves. I have seen sections made in the way Dr. Freeborn describes, and it has seemed to me that they could only have gained in appearance if the celloidin had been removed prior to mounting them. I refer particularly to sections of such organs as the spinal cord, which it is desirable to see the outer contours of, and to recognize the fissures and perivascular spaces in. What is true of the spinal cord must be still more true of eye and embryological preparations. The objection certainly can not rest in the difficulty in mounting on the slide—a difficulty which there are so many devices for overcoming. In asking this question, I desire to take the opportunity of expressing my obligations to the gentlemen who have made what promises to prove an invaluable method early known to us on this side of the Atlantic.

Truly yours,

E. C. SPITZKA.

Proceedings of Societies.

NEW YORK OBSTETRICAL SOCIETY.

A STATED meeting was held February 19, 1884, the President, W. M. POLK, M. D., in the chair.

Dermoid Cyst of the Ovary.—Dr. J. B. HUNTER related the following case, and presented the specimens: The patient was a widow, twenty-eight years of age, who had come to him some weeks before, stating that she had suffered for eight years from severe dysmenorrhœa and metrorrhagia, which had grown worse from year to year. Her periods continued for fourteen or fifteen days. All the usual remedies had been tried in vain. Upon examination, Dr. Hunter found one ovary enlarged and lying behind the uterus. The other ovary could not be felt. A week ago he performed laparotomy, making an incision more than two inches long. The right ovary was found to be enlarged, and was removed; the fimbriated extremity of the Fallopian tube was pretty firmly attached to it. The left ovary was then removed. It was enlarged, and, on cutting into it, about one half its substance was found to consist of a dermoid cyst, containing hair and pultaceous matter. The tubes were also removed with the ovaries. The abdominal wound was closed in the manner which Dr. Hunter had adopted for some time: a silver-wire suture was passed through the abdominal wall and the peritonæum; the edges of the peritoneal surfaces were then carefully coaptated with catgut sutures, and the remainder of the wound was closed with silk sutures. The wound had healed by first intention, and the patient had had no bad symptoms. Dr. Hunter had obtained better results from this method of closing the abdominal wound than from any other.

Dr. C. S. WARD remarked that the specimen was the smallest dermoid cyst of the ovary which he had ever seen. With reference to Tait's operation, he knew of no other surgical operation of equal magnitude which was so uniformly successful, so far as recovery from the operation was concerned.

Dr. CLEMENT CLEVELAND inquired whether there was anything in the anatomical appearances of the structures of the pelvis which would account for the condition of the ovaries and the symptoms.

Dr. HUNTER replied that the uterus was retroverted and one ovary lay behind it. It had been thought that the woman was suffering from cellulitis, but he found no evidence thereof. He thought that, where there was sufficient disease of the ovaries

to interfere with their function, it was common to find aggravated pain. With reference to other methods of closing the abdominal wound in cases of laparotomy, he said that a number of patients were known to return with ventral hernia, or with a weakness of the abdominal walls, which was a source of discomfort to them ever afterward.

Dr. WARD said it was not uncommon for hernia to occur after laparotomy for the removal of a large tumor, but he had never known it to take place after Tait's operation. This might be accounted for, in part, by the fact that Tait's operation had been comparatively recently introduced. He thought, however, that the real explanation was that the tunicity of the abdominal wall still remained, and was in no wise compromised by the operation. He had not had an opportunity to witness Dr. Hunter's method of closing the abdominal wound; it might be an improvement upon other methods. He had, however, had occasion to open the abdominal cavity several times after laparotomy for large tumors, and he had found firm union by adhesion of the peritoneal surfaces within forty-eight hours after the operation. He should think the same thing would occur after Tait's operation.

Dr. HUNTER remarked that he had not seen any case of hernia following Tait's operation, but he had seen very weak abdominal walls, a condition which would favor hernia. He had seen imperfect closure of the peritonæum, favoring abscess in the abdominal wall.

Dr. WARD had seen abscess, but it had been extra-peritoneal, and it usually opened or was incised in the line of the sutures; he had never known a mural abscess burst into the abdominal cavity. The tendency in the peritoneal wound was to union by adhesion, and, if mural abscess occurred, it followed the tracks of the sutures in seeking an outlet.

Dr. HUNTER recalled a case in which a secondary operation was necessary on account of an abscess which had broken into the peritoneal cavity. Abscess was more likely to develop in the cellular tissue than in the cavity.

The PRESIDENT said he once lost a patient after performing Tait's operation from just the condition of which Dr. Ward had spoken. The patient was an unusually stout woman, and the abdominal wall was very thick. Of course, there had been no recent distension of the abdominal cavity, although she had had a child several years before. When he got through the operation, which was easily done, and started to bring the walls together, he discovered that, when he tightened the sutures, they cut directly through the peritonæum, and, after putting in all the sutures save the last one, in running his finger underneath, so as to see what the condition was, he discovered that each suture had cut through the peritonæum, and that the fascia was in direct contact with the intestines. He was so firmly impressed with the importance of bringing the peritonæum together that in that case he unwisely undid the sutures and attempted to get the peritonæum together, but the intra-abdominal pressure was so great that it was an utter impossibility to accomplish it. He had said "unwisely undid the sutures," because he believed that the handling of the cut surface in consequence of his efforts to bring the peritonæum together was the direct cause of the formation of an abscess, which abscess began in the upper portion of the incision, and finally emptied into the peritoneal cavity, causing general peritonitis and death. So that the opinion he held was this: that all experience went to show that it was of the greatest importance to get the peritonæum together, and, in ordinary cases of tumor, where the peritonæum was strong and well stretched out, it could be accomplished without difficulty; but in certain cases, where the condition he alluded to was present, it was not very wise to insist on having everything just as we would like. Of course,

the abscess might have formed in any event, but he was sure he had aided its formation very much by the handling that the cut surface was subjected to.

The President then showed two specimens, from different patients, and related the cases as follows:

Dermoid Cyst of the Ovary.—The patient gave a history of pelvic discomfort, and, upon examination, a tumor of about the size of an orange was found in the region of the right broad ligament, and nothing upon the left side, although all the pain was upon the left side. The uterus was displaced somewhat, on account of the presence of this tumor upon the right side. The patient was not in very good condition for operation, because she had some bronchitis, which had been going on a good while. She had a good deal of cough with it—more than the amount of bronchitis seemed to account for. It was thought there might be a certain reflex element in the production of the cough. At any rate, the pain was so constant and her distress was such that an operation was considered advisable, and it was done last Saturday. The tumor which you see there was found on the right side, and proved to be a dermoid cyst. It was free, and consequently was removed without difficulty. The tube was taken out along with it. The tube on that side, however, was entirely free from any disease, and the fimbriae were distended about as well as can be seen in any specimen. . . . When I searched the other side of the pelvis I found that the tube was dilated, and that the outer end of it, the fimbriated end, had grasped the posterior surface of the ovary and was firmly adherent—so firmly that the outer end of the tube was closed. That was interesting as showing that it was the cause of the pain the patient suffered upon the left side. The tube on the right, as you see here, was free from disease. That on the left explained the difficulty. The ovary was cirrhotic, as we express it, so that I removed it. I used the ether apparatus of Clover in the operation, which, as you know, involves the re-inhalation of the ether over and over again, together with the expired air; so that you use a minimum amount of ether, but its use is always accompanied by more cyanosis than you see with either ether or chloroform administered in the ordinary manner. The result in this case was about as good as in all others in which I have used the instrument. There was no vomiting, and there was very little shock after the operation. The patient was quite blue, however, but the presence of a good deal of mucus in her bronchial tubes probably accounted for that in great measure. Everything went well until Sunday afternoon, about twenty-four hours after the operation, when the temperature suddenly rose to 104° F., and remained at or above that point until yesterday (Monday) afternoon, when it dropped to normal. The sudden rise of temperature I thought was connected in some way with the wound, but, as there was total absence of any local sign or symptom of inflammation there, and the temperature dropped so suddenly, I came to the conclusion it was in all probability due to some morbid condition of the lung, because there were such intense dyspnoea and cyanosis. It was thought she would die; the temperature rose to 106° F., the breathing became very superficial, and she was as blue as we sometimes see children who are born cyanotic. However, her temperature dropped, under the influence of the rubber coil, quinine, and mainly as a result of the subsidence of the inflammatory process, or whatever it may have been. To-day her condition is as good as it could possibly be—the temperature being normal, the pulse a little over 100, and the patient taking nourishment very well. The cyanosis in this case was no doubt intensified by the opium, although the latter was not given in unusual amount (a fluidrachm of Magendie's solution in the course of sixteen hours). The patient died on the fifteenth day after the operation, the cause of death being double

catarrhal pneumonia, having its origin in the chronic bronchitis, and its immediate cause being the action of the ether and the opium.

Myotomy.—The other specimen is a uterus taken from a patient thirteen days ago. This patient had the ordinary history of fibroma of the uterus, with excessive menstrual discharge, which weakened her a good deal. I determined, therefore, to perform Hegar's operation upon her and remove the ovaries and tubes, but I found that she had some albumin in her urine. Before that it had not shown itself, and this made me postpone the operation ten days. Finally, when it disappeared, her condition being good, I opened the abdominal cavity. I planned for the operation finally performed, but it was a plan that I did not intend to follow out unless forced into it. My original design was simply to take out these ovaries and the tubes, and possibly ligate the ovarian artery, if I could get at it easily. I endeavored, before opening the abdominal cavity, to ascertain the condition of the ovaries, but it was an impossibility. I opened the abdominal cavity, and, getting my fingers down, I found the ovary on the left side with no adhesions, but it was very difficult to get it up to the opening. The usual manoeuvre of lifting the uterus by way of the vagina was resorted to, which brought it up—so well up that I got at it without difficulty. I found the ovary in close apposition with the pampiniform plexus, which upon that side was very much enlarged. In ligating the ovary, I attempted to use Mr. Tait's Staffordshire knot, but it slipped after I had cut away the ovary, and the stump, which contained not only the ovarian vessels, but a portion of the pampiniform plexus, was of such size that it was impossible to catch it. I made successive futile efforts to ligate it, but the more I attempted the worse I made it, for every time I tried to put the ligature into tissue I simply imbedded it in the pampiniform plexus, and the vessels opened and blood spurted. Under these circumstances there was nothing left for me to do but to remove the uterus. I therefore enlarged my incision, passed a rubber tube around the cervix, and cut away the body of the organ. I did not use the clamp, but simply left the rubber tube in position, using that as a ligature. I found that, owing to the thickness of the abdominal wall and the presence of a fibroid tumor on the anterior uterine wall (so low that it really encroached upon the internal os), I had difficulty in getting a good stump of sufficient length to be easily brought out of the wound. Still, by introducing pins and lifting it up, and by carefully turning in the peritonæum and stitching it to the stump below the ligature, I managed to get it in proper extra-abdominal position.

The patient has done very well up to to-day. The peritonæum has united firmly, but an abscess developed along the line of the sutures and prevented the proper union of the wall. By fiding the pus and washing it out carefully, however, and putting on adhesive plaster, I have managed to get it together very well. The patient to-night is in good condition, but the slough over the stump (this is the thirteenth day) is still firmly adherent. I take that to be in part due to the fact that I was obliged to include a fibroid tumor in the ligature. The points of interest in the case to me are: the difficulties that I experienced in getting a proper stump, owing to the presence of the fibroid tumor, the thickness of the abdominal wall, the shortness of the pedicle, and then the facts connected with the bleeding from the stump of the ovary owing to the shortness of the attachment of the organ to the posterior portion of the broad ligament in the proximity of the pampiniform plexus. But for this last fact, the patient would simply have been rid of her ovaries and tubes. But then, hæmorrhage occurring, and it being impossible to arrest it, it became absolutely necessary to remove the uterus.

[*Note, June 18th.*—After a sharp attack of peritonitis, the patient made a good recovery.]

Dr. W. T. Lusk inquired as to the exact way in which Dr. Polk applied the elastic ligature.

The President replied that he lifted the uterus out of the abdominal cavity, as there were no adhesions, just as in the Müller modification of Porro's operation, and put the tubing around it while it was thus raised, putting it around double. At first he put the tubing around single, but it broke.

He wished to correct a statement made in the original report: the parietal peritonæum was not in contact with the entire circumference of the stump below the ligature; the two structures were separated by the ligature at the upper side for a space about as large as one's finger-nail. This had induced him to put in a drainage-tube above the stump. The resulting sinus had not closed, and had caused him some anxiety, as, from its position, it had become a receptacle for the oozing from the sloughing stump.

Dr. Lusk said that, when in London, last summer, he saw Dr. Bantock operate in a case in which the tumor was of about the size of that presented by Dr. Polk, and he was very much pleased with the action of the clamp and wire with which he drew out the uterus. The wire was sufficiently strong to guard against any possibility of breaking, and was so stiff that it could not be handled by the fingers, but required a special pair of forceps, which Dr. Bantock had devised for seizing it, turning it round the stump, and attaching it to the clamp.

Dr. HUNTER had operated in a case similar to Dr. Polk's last summer, and in that instance he employed a piece of rubber tubing about as large as that on a Davidson syringe, wrapping it twice around the stump, thus controlling the hæmorrhage perfectly. He then put on the clamp and cut off the entire mass. He reported the case at the time, but had not yet reported the sequela. A little sloughing took place around the stump, and the neck of the uterus came out entire. A fistula led from the abdominal wound down into the vagina, and required to be washed out for about two weeks. The sloughing was probably to be accounted for by a small portion of the vagina having been included in the clamp. The fistula had gradually contracted and closed, and the patient had done well. Examination by the vagina at present showed no remains of the cervix.

The President: I wished to put a clamp on underneath this tube, but I really did not have the room. I was afraid to make greater traction, through fear of lacerating the tissue. So I had to depend upon what the pins would do for me, and they held it up very well.

Dr. HUNTER remarked that in his case it was extremely difficult to raise the uterus high enough, and he was afraid the clamp would cut into the abdominal wall and cause the patient pain, but she did not complain of it in the least.

Dr. WARD said that Hegar's operation, as compared with Tait's, was the more difficult and serious of the two. With reference to removal of the uterus, he thought fashion had guided the profession largely in the use of the elastic ligature. It seemed to him a better method was by the use of the wire éraseur, whereby the mass could be constricted, and by applying the ligature in its track. He believed in the intra-peritoneal method of treating the stump, the same as in ovariectomy. The cases which he had observed did best if the stump was returned. Last summer he witnessed an operation by Dr. W. T. Bull, in which he constricted the uterus by the wire éraseur, and then ligated the stump with a strong silk ligature. There was very little bleeding during the entire operation. After the operation Dr. Bull applied iodoform to the stump thoroughly, and dropped it, and the patient recovered without a bad symptom. It was true that in some cases the wire éraseur would

cut into the nterine tissue if it was very friable; but in other cases it would work very well indeed. He believed that by this method sufficient constriction could be made with the wire to make ligation safe enough to allow of the pedicle being dropped.

(To be concluded.)

Reports on the Progress of Medicine.

MATERIA MEDICA, THERAPEUTICS, AND TOXICOLOGY.

By GASPAR GRISWOLD, M.D.

The Antagonism of Drugs.—Dr. Walter G. Smith ("Dublin Jour. of Med. Sci.," Jan., 1884) begins by defining the term and distinguishing between it and "antidotism." An antidote is a substance which, by chemical action, can deprive another substance of its properties, rendering it inert, or at least insoluble. An antagonist is a substance which produces effects opposite to those of another substance already absorbed. Antidotes act *chemically*, and neutralize the substance; antagonists act *dynamically*, and oppose the effects of the substance on the system. Example of antidote: Sodium sulphate and acetate of lead = lead sulphate (insoluble). Examples of antagonism: Atropine and morphine, chloral and strychnine. The author calls attention to the most famous views on the subject of antagonism, using the case of atropine and pilocarpine as an illustration, as follows: If atropine is injected into a cat, the salivary secretion is arrested at once; the secretion is restored by the injection of pilocarpine. Rossbach explained this on the hypothesis that the pilocarpine acted by stimulating to excessive action the few gland-cells not paralyzed by the small dose of atropine. A more generally accepted view is that of Langley: that the cells are prevented from acting by the atropine, but act again so soon as pilocarpine enough is given to triumph over the atropine. This view he supports by continuing the experiment indefinitely, giving first a small dose of atropine to check secretion, restoring it then by a small dose of pilocarpine, checking it again with more atropine, restoring it again with more pilocarpine, and so on, many times in an hour, as long as the integrity of the tissues permits experiment. This seems to demonstrate that, when two medicines are given whose effects are directly opposed, the organ affected reacts to the medicine which is given in larger dose, and is affected to a degree corresponding with the excess of the large dose over the small one. To illustrate this, if five grains of one medicine exactly antagonize five grains of another, and if seven grains of the one and five grains of the other are given simultaneously, the effect will be the same as if two grains of the former had been given alone. If five grains of each are given simultaneously, the effect is the same as if no medicine had been given. In such a case a true antagonism would exist between the two drugs, their actions summing themselves up algebraically like *plus* and *minus*. It must be admitted that even in the case of such antagonism it is easier to reduce an excessive stimulation down to the normal by a suitable antagonist than to accomplish the converse—i. e., to level up a condition of extreme depression. For example, chloral hydrate is more likely to save life when a fatal dose of strychnine has been given than strychnine is to save life after a fatal dose of chloral hydrate. It must also be admitted that the antagonism of drugs is beset with limitations, the antagonism being sometimes true only for certain doses, or remaining true for certain organs longer than for others. For instance, gr. $\frac{1}{15}$ of atropine helps the action of gr. $\frac{1}{4}$ of morphine, but gr. $\frac{1}{10}$ of atropine counteracts the

effect of gr. $\frac{1}{4}$ of morphine. The antagonism between atropine and morphine persists in the pupil long after doses have been reached in which both act as depressants of respiration. A further difficulty in the matter of antagonism is the fact that too large doses may affect the tissues of the body so that the organs may be paralyzed and the antagonism not demonstrated. For instance, if a very large dose of atropine is given, the salivary glands may be so thoroughly paralyzed that no quantity of pilocarpine will restore their function. At the same time, enough atropine may be given to counteract three and a half times the fatal dose of physostigma (Fraser). The therapeutic importance of clearing up this matter is simply incalculable, and its significance can not be overestimated.

Paraldehyde.—M. Dujardin-Beaunet ("Bull. gén. de thérap.," Jan. 30, 1884) thus describes this new hypnotic: It is a triple condensation of aldehyde (C_2H_4O), and is denoted by the formula $3(C_2H_4O)$, or $C_6H_{12}O_3$. Aldehyde has hypnotic properties, but can not be swallowed on account of irritating vapors which are given off in great quantities when it is taken into the mouth, and produce most distressing choking and lachrymation. Paraldehyde is crystalline, and soluble in ten parts of water; it is entirely free from the disadvantages of aldehyde. The author has employed it largely in the following prescription: R Paraldehyde, 3 ij; alcohol, 3 ij; syr. simp., 3 ij; tr. vanilla, 3 j. M. Sig. One or two tablespoonfuls. All patients agree that it is less unpleasant to take than chloral. Its hypnotic effect is well marked, but it has no anodyne properties whatever. Patients awake from its influence without headache or discomfort of any sort. It has no effect upon the secretions. In cases where there is pain or very intense restlessness, as in uremia, opium or chloral is to be preferred. But, where a simple insomnia is to be treated, paraldehyde meets the requirements better than any drug the author has ever seen. It seems not to have any tendency to depress the heart or the respiratory system, as has been abundantly proved by experiments upon dogs; and the sleep caused by it is so light and natural that a slight pinch causes awakening, even after large doses have been taken. The author has used it in a great number of cases, but not long enough to determine whether there is a tendency to form a habit, as in the case of chloral.

In the same journal, M. Yvon thus describes the substance: Aldehyde is an intermediate substance between alcohol and acetic acid, in the acetous fermentation. Alcohol is C_2H_5O ; this becomes C_2H_4O (aldehyde). Aldehyde (C_2H_4O), when exposed to the air, takes one atom of oxygen and becomes $C_2H_4O_2$ (acetic acid). If three parts of aldehyde are condensed, a new body is formed with distinct properties. This is called paraldehyde $3(C_2H_4O)$, or $C_6H_{12}O_3$. Pure paraldehyde is crystalline. It is soluble in ten parts of water, and has a pungent taste, but less so than that of chloral. It may be prescribed in the following form: R Paraldehyde, 3 j; spir. menth. pip. 3 ij; aqua q. s. ad 3 ij. M. Sig. Tablespoonful dose. The preparation of paraldehyde is not yet general in France, and the only reliable samples must be obtained from the author. He is at present laboring to perfect its manufacture, preparatory to making it an article of commerce.

Bromide of Ethyl as an Anæsthetic.—Mr. W. Roger Williams, of the Middlesex Hospital ("Brit. Med. Jour.," March 1, 1884), strongly recommends the bromide of ethyl to produce primary anesthesia. He makes a cone of a towel with paper between its folds, as is usually done for the administration of ether. One drachm of the bromide of ethyl is poured into the cone, which is then closely applied to the face, excluding air as far as possible. Anæsthesia is complete within sixty seconds, and lasts two minutes. The patient awakes without nausea or headache. The author has used bromide of ethyl to induce this

primary anesthesia in three hundred cases; he never employs it in cases requiring prolonged anesthesia. He quotes Dr. Chisolm's paper in the "Maryland Medical Journal," who recommends the use of bromide of ethyl in such short operations as slitting the canaliculi, passing nasal probes, etc.; also Dr. Prince's, in the "St. Louis Medical Journal," who recommends it as a precursor to sulphuric ether, and prefers it in this relation to nitrous-oxide gas.

The Sodium and the Potassium Bromides and Iodides.—

Dr. T. J. Hudson, in a paper on bromide and iodide of sodium ("Lancet," Dec. 22, 1883), sums up as follows their advantages over the bromide and iodide of potassium: He first calls attention to the tendency of potash to produce anæmia, digestive disturbance, and increased solid urinary constituents; also its depressing influence on the heart. Soda has none of these effects. It relieves dyspepsia, increases the water of the urine without affecting the solids, and has no effect upon the heart. For these reasons there is much less of reactive disturbance after large doses of the bromide of sodium than occurs after similar quantities of bromide of potassium. The potash salt contains relatively more bromine, and the dose of the sodium compound should be larger in the proportion of about fourteen to twelve. In ordinary slight nervousness, and in insomnia and the like, give the bromide of sodium to prevent the after-effects of the potash. In delirium tremens, give the bromide of sodium to avoid the depressing influence of potash on the heart. In cases of epilepsy the bromide of potassium seems to be more efficient, but, where the treatment is kept up for a long time, substitute the bromide of sodium to avoid digestive disturbances and general systemic depression. One hundred grains of the bromide of sodium may be given at a dose for any purpose without danger and without any unpleasant after-effects. Iodide of sodium was tried in syphilis, in large doses, but did not act so rapidly as iodide of potassium; it was, however, efficient, and was often substituted with advantage where patients were suffering from the effects of long-continued iodide of potassium. In aneurysm the iodide of sodium was much less efficient than the iodide of potassium, probably because it lacked the cardiac depressant effects of the latter. In whooping-cough the author found the bromide of potassium more efficient; this he explains by the supposition that the potash depresses the cerebrum.

Sudden Death during Chloroform Anæsthesia.—Dr. F. Junker (*Ibid.*, Jan. 5, 1884) describes a case of death during chloroform narcosis, but not from it, which occurred at Bardeleben's clinic at Berlin. The patient was suffering from a fracture of the upper end of the shaft of the femur. He was put under chloroform with all the precautions, but suddenly became collapsed, and died in spite of all efforts to resuscitate him. During the efforts at resuscitation, Professor Bardeleben expressed doubts as to the death having been caused by chloroform. The post-mortem examination was made in Professor Virchow's pathological laboratory and disclosed the cause of death—fatty embolism of the lungs. The femur was broken at a point where it is especially rich in marrow, and the fat globules from this source had entered the veins in large quantities and had occluded the pulmonary capillaries, thus causing death by preventing the pulmonary circulation.

Ergotin.—Dr. Ringer and Dr. Sainsbury, in a very interesting paper on ergotin ("Brit. Med. Jour.," Jan. 19, 1884), describe some experiments which go to prove that it causes spasm of the arterioles by direct action. A tortoise is taken, the brain and spinal cord are broken up, and the tortoise is cut transversely in two. The continuation of the abdominal aorta is then found on the cut surface of the posterior section and into it is thrust the end of a cannula, through which is supplied, by siphon action, a saline solution 0.6 per cent. The saline solution passes from the

abdominal aorta into the capillaries of the posterior half of the tortoise, and then into the veins. As it escapes from the cut veins it is collected in a vessel and measured. The pressure in the aorta is always the same, the saline solution being supplied by siphon action at a rate free from variation. Any variation, therefore, in the amount of fluid escaping from the severed veins in a given period must be due to changes in the caliber of the arterioles. With a preparation like this the authors performed the following experiment: As soon as the regular rate was determined at which the solution was flowing through the tortoise, some Bonjean's ergotin was added to the solution. Almost immediately the amount of fluid escaping from the cut veins was diminished from one half to two thirds, showing that a contraction of the arterioles had occurred. When a simple solution was substituted, the arterioles gradually relaxed, and the flow returned to its original rate. The use of an ergotized solution again diminished the flow as before. This experiment seems to prove conclusively that ergotin causes the arterioles to contract; and, since the spinal cord had been broken up, the contraction would seem to be due, not to a central influence, but to an effect of ergotin upon the arterioles themselves. This result is important as bearing upon the use of ergotin locally, by injection into the tissue to be affected.

Metallo-Therapy.—Dr. Grace Peckham ("Arch. of Med.," Dec., 1883) advances the following opinions: 1. The metals generally used are iron, zinc, copper, gold, silver, tin, and platinum—especially the first four. The plaques, or discs, should be an inch in diameter, circular (although the shape makes no difference therapeutically, circular plaques are most convenient), and should have a hook or ring on the free surface through which a ribbon may be passed to suspend them. They should be smooth, and their thickness or weight is unimportant. 2. The number used should be generally from five to nine. One has been used alone, and, on the other hand, Burg fairly "draped" some of his patients with discs. The author has generally used nine. 3. The selection of a metal is purely experimental. It is customary to begin with iron, and then to try the others in the order named above. The disc experimented with should be left on for about thirty minutes; if during that time no modification of symptoms has occurred, and no sense of burning or stinging at the site of the disc has been experienced, another metal should be tried. Under an active disc, the skin is frequently reddened, sometimes vesicated, and sometimes it sweats profusely. When a metal has been found which is in accord with the "metallic sensibility" of the individual, nine discs of it should be hung about the part and kept there until disappearance of the symptoms, or at least great amelioration of them, has taken place. They are sometimes allowed to remain for several days, until a cure is effected. Should relapses occur, the discs are to be used again, in the manner which was successful before. 4. Burg regarded the external use of metals as merely a stepping-stone to their internal use. The internal therapeutic action, he states, is always the same as the external, and the latter should be employed to determine the personal idiosyncrasy. The metals are given in the form of powder, finely minced leaves, or in the various salts. It matters little which salt is used. Sometimes mineral waters which contain the desired metal in a definite quantity are used. 5. As regards the affections which have been successfully treated by metallo-therapy, the list includes most of the neuroses, and not a few symptoms caused by organic disease. Anæsthesia, paresis and paralysis, deafness, achromatopsia, and amblyopia are among the *hypo-neuroses*; the *hyper-neuroses* include pain, cramps, spasms, convulsions, etc. Insomnia is one of the affections for which a great deal has been done by metallo-therapy.

Inunction as a Febrifuge.—Dr. P. Colrat, in a very inter-

esting paper on modifications of temperature produced by general inunctions, especially in the febrile diseases of children ("Lyon méd.," Jan. 13, 1884), recalls the celebrated experiment of Fourcault, reported to the Academy of Sciences in 1838, in which he proved that the application of an impermeable varnish to the skin of an animal caused a fall of temperature, instead of causing it to rise, as would naturally be anticipated. Schlemann, of Hannover, was the first to apply the discovery to therapeutics, but limited it to the treatment of scarlatina; he believed that it diminished fever, quieted the patient, prevented complications, and diminished the chances of contagion. The treatment was soon generally adopted, and, although many did not believe that it had any influence in preventing complications, it was on all sides found to lower the temperature and diminish irritability. The author of this paper has employed inunctions in a large number of cases, and has arrived at the conclusion that they are of use in all febrile diseases, and that their use should not be limited to the eruptive fevers. He finds that the temperature begins to fall immediately after an inunction, and continues to fall for about an hour; it then remains stationary for about half an hour longer, when it commences to rise again. At the end of two hours it has reached the point where it stood before the inunction. The temperature again falls when a second or third inunction is performed, and may be kept down indefinitely by repeating them. The younger the child, the more marked the effect; the temperature may fall as much as three or four degrees. General inunctions have been so freely practiced that it is quite evident that they are without danger, and one finds it difficult to explain the famous case of the child who was gilded to personate the "golden age" at the inauguration of Leo X, and who died in consequence. Senator proposes to explain this case as due to poisoning from the solution of gold employed in the gilding. The fall of temperature which follows inunction has been explained by Laskjewitsch and Lomikowski as due to increased loss of warmth by radiation. These experimenters proved that, if a limited portion of skin was covered with grease or varnished, a greater amount of heat was radiated from it than from an equal surface of bare skin. They further showed that, if animals were greased or varnished, they soon died from depression of temperature, the blood in the veins being arterial from non-use of the oxygen contained in it, this last being due to arrest of oxidation and tissue metamorphosis by low temperature. They then prepared other animals in the same way, and showed that they could be kept alive by covering them with cotton wadding, or by putting them in a very warm room, or resorting to any means which prevented the increased loss of body heat which followed the inunction. According to these experimenters, adults are less affected by inunction than children, because they present less surface in comparison with their weight, and are less profoundly affected by measures which increase their rate of heat radiation. Dogs and fur-clad animals die as a result of inunction, because they are naturally prevented by their coat from losing much heat by radiation; when, therefore, the non-conducting properties of their coat are neutralized by the application of ointments or varnish, the loss of warmth is increased so far beyond the normal that life can not continue. The idea that their death under these circumstances is due to asphyxia from suppression of cutaneous respiration is opposed by the fact that the appearances post mortem are not at all those of asphyxia, the blood containing even more oxygen than normal, and even the venous blood being bright red because the cooling tissues did not use the oxygen that was offered them, but allowed it to pass on into the veins, as it does in syncope.

Convallaria and Digitalis.—Professor Coze, assisted by Dr. P. Simon, has completed a series of careful experiments

upon the actions of *Convallaria maialis* and digitalis upon the frog's heart. He finds ("Bull. gén. de thérap.," Dec. 15, 1883) that in both cases a prolonged and strengthened systole is produced after a time, with increased arterial tension and more sustained flow of blood, the diastolic slowing of the blood-current becoming less perceptible under the influence of the medicines. He finds that this increased steadiness of the blood-current is more marked when convallaria is used, although digitalis seems equally able to slow the pulse. In the cases where full doses of digitalis were given, a dangerous tendency seemed to develop for the heart to linger in an unduly prolonged systole, as if it were on the point of stopping altogether. This was not observed when convallaria was used. The author prefers convallaria, on the basis of physiological experiment, as safer and more effective in stimulating the circulation.

Snake-Poison.—Sir Joseph Fayrer, in a very interesting paper ("Lancet," Feb. 16, 1884), first describes the organ which secretes the poison as a compound racemose gland analogous to the parotid. The duct of this gland enters the fang near its root, the fang containing a central canal like the lumen of a hypodermic needle. The gland is so situated that it is compressed between the masseter and external pterygoid muscles when these contract; the result is that several drops of venom are ejaculated from the tiny opening near the point of the fang at the moment when the muscles are contracted in the act of driving in the fang. After several successive bites the supply of venom is temporarily exhausted, and the snake becomes comparatively harmless; in a few hours, however, after the products of the poison-gland have had time to accumulate, the bite again becomes fatal. The activity of the poison differs not only in different species, but also under different conditions of temperature, health, etc. The poison of the rattlesnake, moccasin, and copperhead is neutralized by bromine, iodine, hydrobromic acid (33 per cent.), sodium hydrate, and potassium permanganate (Weir Mitchell). If any of these substances are added to venom, the mixture may be injected without any symptoms resulting. The author says that he has demonstrated in India that snake-venom is absorbed from a mucous surface, contrary to the traditional and almost universal belief. He does not believe that it is safe for any one to suck a snake-bite. The poison is most rapidly fatal to warm-blooded animals, but does kill cold-blooded animals, down to the lowest forms of invertebrate life. Strange to say, poisonous snakes can not poison themselves or other poisonous snakes; innocent snakes, however, are affected at once like other animals. The changes following snake-bite are local and general. *Locally*, the tissues become almost at once the seat of rapid decomposition. Within four or five hours the neighborhood of the bite is found presenting an appearance of ecchymosis over an area of several inches. On section, the tissues are found infiltrated with sero-sanguinolent fluid, containing imperfectly formed, tarry coagula and coffee-grounds granules. Blood does not flow on section. The tissues are in a state of granular disintegration, the capillaries being the first to break down and permit the altered blood to infiltrate the tissues. *Generally*, these blood changes are more or less present, though less conspicuously. Cadaveric rigidity comes on very early. Hematogenous jaundice is frequently present. The poison seems to kill by depressing effects upon the respiratory apparatus. In some cases, where the poison enters a vein, death may be almost instantaneous from paralysis of the heart. The proper treatment is to apply a ligature or pressure on the cardiac side of the bite instantly. A free incision should be made over the bite at once, and any tissue which seems at all discolored or altered should be boldly dissected out. The wound should be washed out with a five-per-cent. solution of potassium permanganate. Warm blankets and alcoholic stimulants are

to be employed as required. In the absence of potassium permanganate, iodine may be used; or any escharotic, such as nitric acid, etc. These escharotics do not destroy the poison, but they convert the surrounding tissues into an impermeable eschar, and thus prevent absorption. The author believes that the blood of those poisoned is itself capable of causing death if inoculated. This would involve the hypothesis that the poison multiplies in the circulation like that of vaccinia, for instance; this view would class snake-venom with zymotic-disease poisons rather than with toxic agents like drugs.

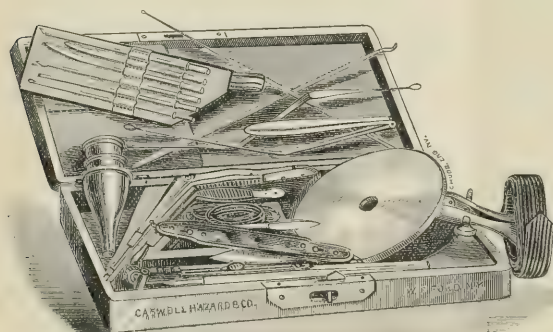
[Some of the author's views are in opposition to those entertained by most other observers; they are as follows: 1. The poison is absorbed by mucous surfaces. 2. Poisonous snakes are not affected by snake-poison. 3. The poison kills by stopping respiration, the heart still continuing to beat. 4. The blood of poisoned animals produces death when inoculated, thus classifying snake-poison as a zymotic poison. He does not speak of the immunity of pigs, which can be bitten by the most venomous snakes without dying; and he does not allude to the antagonistic action of alcoholics when given early and freely. In America, it is well known that life may be saved by the free use of alcohol after a rattlesnake bite, and this has always been considered corroborative of the view that snake-poison acted as a cardiac depressant.]

New Inventions, etc.

A HANDY POCKET EAR-CASE.

DESCRIPTION BY ROBERT BARCLAY, M. D.

DR. SEXTON has devised for physicians who require the aid of instruments for the examination of the ears of their out-patients an aural case which contains, besides the means of illumination of the deeper parts of the organ, instruments for cleansing the external auditory canal of secretions and cerumen, the removal of foreign bodies, and the performance of nearly all operations likely to demand the otologist's or practitioner's attention—such as the incision of abscesses about the ear, furuncles within the canal, and the membrana tympani.



COMPLETE CASE.

It is well always to have everything essential for these purposes kept together in a case, since, when in haste, one is liable to forget something if the instruments are scattered about. Such a collection is shown in the cut of a pocket-case, six and a half by three inches, and one inch in depth, which contains the instruments described below.

CONTENTS OF THE CASE, AND DESCRIPTION OF THE INSTRUMENTS.

1. *Polypus Snare*.—This instrument consists of a handle, cannula, and wire loop. The handle is four inches and a half long, made of ivory, has at one end a receiving cylinder, and on its anterior surface a sliding bar, at one end of which is a milled button by which it is drawn down by the thumb of the hand in which it is held, while at the other end of the bar are three slots or notches into which the wire is passed, the three angular turns thus made securing it more firmly than can be done by winding it around a post, as is required by most snares. The proximal end of the receiving cylinder is beveled on its inner edge to prevent undue friction on the wire. The axis of this cylinder forms an angle of 110° with the long axis of the handle, thus permitting simultaneous vision and manipulation at the extremity of the adjusted por-

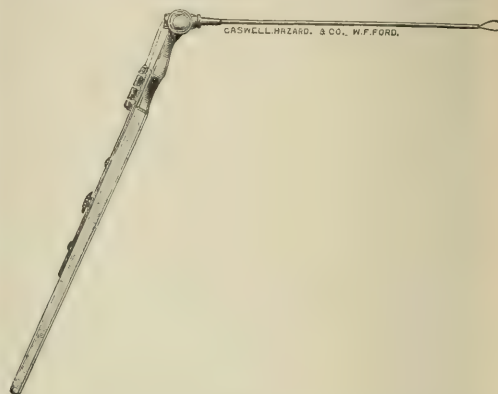


FIG. 1.

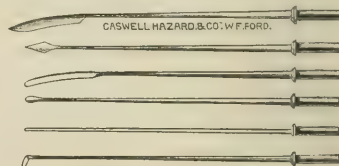
tion. The wire used is made of malleable iron, No. 35, and the same piece, if readjusted carefully, may be used for two or three operations.

The six instruments to be immediately described below are made to fit the receiving cylinder of the snare-handle for manipulation therewith.

2. *Silver Cannula*.—A part of the polypus snare is made of coin silver; it is $\frac{1}{8}$ inch in diameter.

3. *Myringotome*.—Is lance-shaped, made of steel, and has both edges sharpened.

4. *Sharp-pointed Ear-Knife*. 5. *Probe-pointed Ear-Knife*.—Two small bistoury blades, suitable for any cutting operations in the canal, such as incision of furuncle or abscess.



FIGS. 2, 3, 4, 5, 6, and 7.

6. *Hoe-shaped Scraper*.—This is $\frac{1}{8}$ by $\frac{1}{32}$ inch in surface, with sharp edge, for the removal of granulation tissue from the tympanum and adjacent parts, or the pedicle of a polyp, too small for the use of the snare.

7. *Stout Silver Probe*.—Made rather strong, with large bulb, suitable for probing about polypi and in tympanum; it is less liable than more slender probes to injure the parts or to cause bleeding.

8. *Foreign-Body Forceps*.—This instrument is made to seize an object by a sliding ring which glides down over the blades to their end

when the handle is pressed by the thumb and fingers. Upon the extremity of each blade is *one* needle point, so set that the forceps can

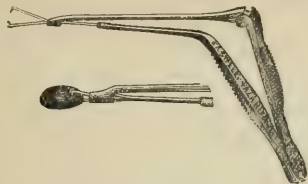


FIG. 8.

take hold of a presenting surface without the exertion of any propulsive force. The two blades, attached to one bar, can rotate in the handle, thus allowing an object, when in the process of removal, to adapt itself to the conformation of the canal. The attachment by *two* needle points provides an axis upon which the foreign body can move from side to side also. With this instrument very strong traction can be made. In cases where the foreign body lies deeply or impacted anywhere within the canal or tympanum, and in removing sequestra, this will prove especially useful.

9. *Small Dressing Forceps*.—Represented in the cut one third of the actual size; it is very light; has smooth, broad ends, which meet with

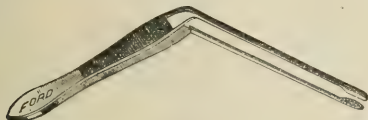


FIG. 9.

great precision, and whose bite may be strengthened by shortening the grasp upon the instrument. It may be employed as well for removing small foreign bodies lying loosely in the canal, or for small polypi.

10. *Head Mirror and Adjustable Band*.—This mirror is concave, two inches and a half in diameter, about six inches focal distance, and perforated at the center. The head-band is of strong silk ribbon

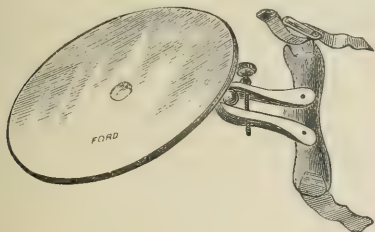


FIG. 10.

one inch wide, and is held, when adjusted to the head, by a sliding shoe-buckle. The forehead-rest is padded and faced with chamois-skin.

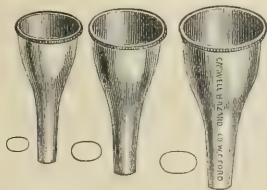


FIG. 11.

11. *Aural Specula*.—These are made of German silver, after the Erhardt [or Gruber] pattern, of three or four different sizes, which fit

one within the other. They may be used as nasal specula at the anterior nares.

12. *Folding Tongue-Depressor, Curette, and Oscope*.—Is made of polished steel, seven inches long when opened, four and three fourths when folded; it is three sixteenths of an inch at its broadest part, and the slender portion terminates in a small curette; has but one angle; is recommended for its lightness, its harmless appearance to young or timid patients, and its sufficient strength for depressing the tongue for ordinary inspection of the pharynx, retracting the lips and buccal walls, and for curetting.

13. *Curved Double Curette*.—Terminates at one end in a plain ring curette, at the other in a toothed, hooked curette. The latter is especially serviceable in cases of foreign body in the canal where syringing proves unavailing, or where the intruder is of such hard or smooth nature that the foreign-body forceps can not secure a hold. In nearly all such cases it can be forced between the object and the walls of the canal, when, from its firm hold—the teeth being set so that, on withdrawal, they become fastened or firmly impinge against the object—effective traction can be made.

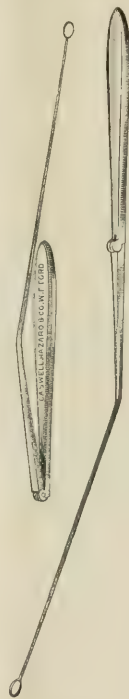


FIG. 12.



FIG. 13.



FIG. 14.

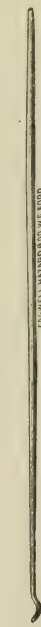


FIG. 15.

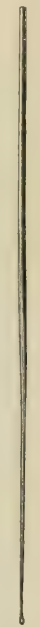


FIG. 16.

14. *Vulcanite Cotton-Wool Carrier*.—Is five inches and a half long; highly polished except at the tip of the more tapering end, which is left unpolished to insure firmer attachment to cotton-wool twisted about it for wiping out the canal or tympanum. The more abruptly conical, fully polished end permits cotton-wool to be slipped easily off it and left in the canal either as absorbent, tampon, or dilating tent when rolled together very tightly.

15. *Aluminium Cotton-Wool Carrier*.—Is light and delicate, terminating in a sickle-shaped curve; is useful whenever it is desired to make applications to the more remote portions of the cavity of the tympanum, or to cleanse it with cotton-wool brush.

16. *Long Silver Probe*.—Tapering very gradually, six and a half

inches in length, tipped by a very small pyriform bulb; is serviceable in exploring mastoid sinuses especially.



FIG. 17.

17. *Two-Bladed Scalpel*, one of whose blades has a straight back, the other having back and cutting edge of equal curves; both blades secured by a sliding (or spring) catch; can be employed for incising the mastoid region, or for superficial cutting operations on auricle or meatus.

There are compartments in the case intended to contain iron-wire for the polypus snare, cotton-wool, etc.

This case is manufactured by Mr. W. F. Ford, of Messrs. Caswell, Hazard & Co., New York.

Miscellany.

THERAPEUTICAL NOTES.

Inhalations of Nitrogen in Pulmonary Diseases.—Dr. Sieffermann ("Gaz. méd. de Strasbourg"; "Bull. gén. de thérap.") thus describes the effects of these inhalations:

1. With the first inspirations, the patient declares that he can breathe better, dyspnoea diminishes, and at the same time a feeling of well-being supervenes. The pulse becomes small, often thready, from contraction of the radial artery. So long as the process lasts, enfeebled, anæmic, and nervous patients have vertigo, with a sensation of feebleness and of pressure in the head, sometimes deepening into faintness. These symptoms are observed only at the first two or three sittings; the patients have then become accustomed to them and always bear them perfectly well. The symptoms vary in degree with the amount of nitrogen administered.

2. According to Mermagen, the suppression of night-sweats is a constant result, most commonly following the second or third sitting. Other experimenters are not agreed upon this point, some, like Kholschutter, maintaining that the sweats are increased. But Mermagen is very positive, and affirms that it is only in desperate cases of florid phthisis that the sweating is not controlled. He adds that, if Kholschutter's experience differed from this, it is because he used air containing ninety-six per cent. of nitrogen, a mixture almost poisonous.

3. One of the most surprising effects, according to Mermagen, is the very rapid disappearance of the dullness due to tubercular infiltration of the apex, which occasionally takes place after fifteen days of the treatment. Where an infiltration of the apex has been clearly made out, with dullness on percussion, bronchial respiration, and mucous râles, the vesicular murmur is heard again, with small moist râles and a tympanitic resonance. Kholschutter states also that he has seen dullness disappear when it corresponded to chronic infiltrations of the pulmonary parenchyma or to pleuritic exudates. But in several cases he observed the cough become more frequent, and the temperature rise nearly to 104° Fahr. He asserts, indeed, that the temperature rises regularly after each inhalation, which he considers a bad symptom. Mermagen believes that this rise of temperature coincides with the disappearance of the infiltration from the apex, and therefore that it is due to an absorption fever. The two observers' disagreement as to the explanation is probably to be imputed to the fact that one of them used air containing only from two to seven per cent. of nitrogen, while the other employed air impregnated with eleven per cent. of the gas at the least, and sometimes even gave pure nitrogen, so that he often produced poisoning like that due to carbonic acid. By dearly-bought experience, Krüll afterward proved that, to get good results, not more

than seven nor less than two per cent. of nitrogen should be added to the air; so that there is little room for doubt that the effects observed by Kholschutter are to be attributed to the use of excessive doses.

4. All observers agree as to the soporific effects. Mermagen says that he has seen more than one patient go to sleep while the inhalation was in progress, and that others were able to sleep for eight hours at a time, whereas before their night's rest had been prevented by cough and dyspnoea.

5. The appetite is perceptibly increased, and consequently the nutrition improved.

6. A good effect has even been observed upon colliquative diarrhoea, and in patients who were in a desperate stage of the disease.

Irritative cough was certainly ameliorated during the treatment, but the improvement did not continue. The compiler regrets that the breathing capacity was not tested with the spirometer and the pneumotometer, for a comparative table founded on such tests would have furnished the best data as to the results of the treatment.

The Treatment of Scrofulous Bubes.—Dr. Lhuillier ("Thèse de Paris"; "Bull. gén. de thérap.") treats of a variety of inguinal bubo which occurs in scrofulous persons between eighteen and thirty-eight years of age, and appears to result most frequently from excesses in walking or in venery, which cause engorgement of the inguinal glands and favor the localization of scrofulous disease in them, often quite independently of any other scrofulous manifestation. Syphilis also favors the occurrence, and it is then termed syphilo-strumous adenitis (*adénite syphilo-strumense*). Strumous adenitis calls for a general anti-scrofulous treatment, such as cod-liver oil, phosphate of lime, wine of cinchona, and especially preparations of iodine in small doses extending over a long period. During the stage of induration, local treatment is apt to prove fruitless, although applications of tincture of iodine may do a little good; when fluctuation is evident, however, there should be no hesitation, but the abscess must be opened freely, antiseptically, and with Paquelin's cautery if practicable, and an effort made to destroy the wall. If the patient declines to submit to the latter procedure, the cavity may be dressed with tincture of iodine or with iodoform. In the syphilo-strumous form the treatment is the same, but softening may be hastened by the use of mercurial plasters.

Sulphide of Calcium to prevent Suppuration in Small-pox and Chicken-pox.—Surgeon-Major C. J. Peters, of the British army in India ("Indian Med. Gaz."), relates a number of cases in which he succeeded in preventing the suppuration of the cutaneous lesions, and therefore the secondary fever, of small-pox, some years ago, by the local use of a mixture of the pentasulphide and the hyposulphite of calcium (commonly called sulphide of calcium) prepared by boiling a quarter of a pound of quicklime and half a pound of sulphur in five imperial pints of water until the liquid was reduced to three pints in measurement, when it was filtered and kept in glass-stoppered bottles. If ordinary well or river water is used, a white precipitate is liable to form in three or four days, while the solution loses its color and is no longer efficacious; it should therefore be freshly prepared, in quantities only sufficient for three or four days' use. It is applied to the affected parts two or three times a day, with a feather, taking care that none of it gets into the eyes. As a rule, the pocks thus treated did not suppurate, but withered in the course of three or four days. The author believes that the lotion acts by destroying the germs of the disease, preventing suppuration, and guarding against the complications that result from blood-poisoning. He would now combine its use with the internal employment of the drug.

Tannate of Cannabine as a Hypnotic.—Pasinelli ("Berliner klin. Wochenschr.," "Deutsche Med.-Zeitung") has lately been testing the properties of this preparation, recommended some time ago by Frommüller as the best one for producing the hypnotic effects of Indian hemp without the unpleasant collateral effects of the drug. He has given it sixty-three times, in various sorts of cases, in doses of from a grain and a half to seven grains and a half, in the form of powder. In rather more than half the cases the result was satisfactory, deep and prolonged sleep being produced promptly; but in the other cases the effect was either insufficient or nil. He concludes, therefore, that, while the tannate of cannabine is entitled to be ranked with the hypnotics, it can by no means take the place of the others.

Original Communications.

EPHEMERAL HIGH TEMPERATURES
IN YOUNG CHILDREN.*

By HENRY N. READ, M. D., BROOKLYN,

ASSISTANT PHYSICIAN TO THE LONG ISLAND COLLEGE HOSPITAL; ATTENDING
PHYSICIAN TO THE SHELTERING ARMS NURSERY.

BOUCHUR, in his admirable work on the "Diseases of Children," has formulated much of his experience in pædiatrics in the shape of aphorisms, many of which bear evidences of his sagacity and the keenness of his powers of observation as a clinician. The one which I shall quote here bears directly on a class of disorders in children in which the cases which I shall present to-night occur. The aphorism is so well expressed, and is so in accordance with the facts, that it deserves to be studied by all who prescribe for children or are interested in their diseases. It is as follows: "In the first stage of childhood there is *no relation between the intensity of the symptoms and the extent of the material lesions.*" The most intense fever, restlessness, cries, spasmodic movements, and convulsions may disappear in twenty-four hours without leaving any traces. These cases are familiar to all practitioners, and have caused many agreeable surprises at their termination; they may, indeed, be said to have induced an amount of "hedging" in the prognosis of children's diseases unknown in the diseases of adult life, and are peculiarly the province in which the powers of homœopathy shine. To attempt to go over the whole ground indicated in this aphorism would be far too tedious a task for me to undertake this evening, and I shall content myself with presenting to your notice one class of these disorders only, which is to me the most interesting of these cases of violent general disturbance which subside so quickly without leaving any results. These are the cases of *ephemeral high temperatures* in infants. I present here six cases, which I have seen recently. These cases are taken at random, and have nothing unusual about them; their features are no doubt familiar to the members of the Society. They are presented with a suggestion as to their possible cause, and to elicit discussion.

CASE I.—The first case was that of an infant under nine months of age. I was called to see the child—a female—about midday, and was told that she had not been sick since her birth till the date of my visit. The mother said the child had been rather fretful during the night, but had nursed during the early morning, and had gone to sleep as usual. About 10 o'clock A. M.—I saw it between 12 M. and 1 P. M.—she noticed that it was sick. It vomited and cried, grew feverish and steadily worse, till she sent for me. I found the patient presenting only the general symptoms of fever, except that the bowels had moved twice and naturally, and it had urinated freely, the urine on the napkin being normal, so far as could be judged, in quantity and color. The pulse was 200 a minute, respiration 80, and the thermometer in the rectum marked 105.5° F. Considerable nervous disorder was present, and, fearing convulsions, a warm mustard-bath was ordered, and four grains of chloral hydrate,

dissolved in a little sweetened water, were administered. The child's skin, I should state here, though hot and burning to the touch, did not present the other characteristics of a feverish skin, but was most resilient and elastic. As the patient grew quiet, I left, but saw her again that evening. Two more doses of chloral—in all, twelve grains—had been given meanwhile. She had been sleeping during the afternoon and was better, and, on visiting the child in the morning, I found her quite well, with a normal temperature, though she had apparently lost some flesh.

The other cases I shall not relate in detail. They presented, in the main, the features that the one described did.

In Case II the patient had a temperature of 108°, and was well in twenty hours.

In Case III there was a temperature of 103.5°, and the patient was well in less than fourteen hours.

In Case IV the temperature was 106°, and there was so much disturbance of the nervous system, with tension of the fontanelles, that I administered chloroform by inhalation, which was followed by a profound sleep of several hours, and a drop to normal temperature within twenty-four hours.

Cases V and VI did not differ in any particulars from those mentioned.

These cases are extremely puzzling—sometimes they are of shorter duration than those given—a sudden jump of the temperature up, to be followed in a few hours by as sudden a fall almost, and subsidence of all grave symptoms. The only explanation which occurs to me of these phenomena is that of the *insufficient regulating power* of the nervous system. The undeveloped state of the nervous system in the young and the troubles it gives rise to are well understood; but the exact influence of the nervous system upon the production of heat within the body is not yet thoroughly elucidated. That it has an important part to play is undoubted. The three factors in the maintenance of the bodily heat at normal temperatures are the metabolism of the tissues, the radiation or conduction of the produced heat, and the regulation of these two processes by the nervous system; and upon the nice adjustment of these forces depends the ability of the animal organism to maintain a steady temperature throughout years of change. Pfüger and his pupils have demonstrated (Foster's "Physiology," chap. v, p. 481) that in warm-blooded animals metabolism is increased by exposure to external cold, in order for them to maintain their normal temperature, the consumption of oxygen and the production of carbonic acid being markedly augmented, whereas in the cold-blooded animals the oxidation of tissue is decreased by cold and increased by heat. And, furthermore, it has been shown that the mechanism regulating these processes is of a nervous nature, since warm-blooded animals in which the action of the nervous system has been suspended by woorara poisoning, section of the medulla oblongata, or otherwise, behave like cold-blooded animals toward heat and cold, their metabolism being increased by the former and diminished by the latter. Although these experiments have been chiefly directed toward the thermotaxic nervous mechanism by which external cold is made to increase tissue oxidation, it may fairly be inferred that a complementary mechanism exists by which metabolism may

* Read before the Medical Society of the County of Kings, June 17, 1884.

be diminished likewise. "And this suggests that pyrexia, or fever, is the result of a paralysis or suspension of this mechanism, the metabolism of the body running riot, so to speak, in the absence of directive and restraining nervous influence" (Foster's "Physiology," p. 485).

A slight glance at the different varieties of pyrexia may also serve to throw some light on our point. In ordinary fever, either symptomatic or specific, we have studied out many of the concomitants and many of the results, in the shape of waste tissue, deficient secretions, etc., etc. In the usual fever cases we have always diminished secretions with increase of oxidation, with or without interference with radiation. If this latter be diminished as metabolic change increases, we have the steadily ascending type of fever—gradual morning and evening increase. But the sudden enormous rise of temperature to what is regarded as an almost fatal, or at least exceedingly dangerous, point, is seen in the adult in lesions of the nervous system only, or in insolation, which may be regarded as a cerebral affection, the highest recorded temperature in Holmes's "Surgery" and Reynolds's "System of Medicine" being in a case of traumatic tetanus, in which the thermometer marked 110°. The highest recorded temperature with which I am acquainted occurred in a case of injury to the spine, the account of which was published in the "Lancet" in the winter of 1880-'81, in which the thermometer reached the extreme height of 112°. This patient recovered, and indeed it may be stated in general that the prognosis is more favorable in cases of high temperature from nervous disorder than in those of increased metabolism with decreased radiation.

The analogy between these cases in adults and the ephemeral high temperatures of infants is marked. The points in favor of the sudden high temperatures in children, followed by as rapid subsidence, being due to disturbed nerve inhibition and not to interference with the other processes, are, briefly, non-interference with the secretions proportionate to the fever, the bowels, urine, etc., being generally, though not always, not very much checked; the skin more moist and natural than in ordinary fever; marked disturbance of the nervous system; lastly, the ready subsidence of the high temperature on the exhibition of a nerve sedative, chloral being the remedy to administer. The warm bath is an excellent adjuvant, but the administration of quinine, digitalis, veratrum viride, or aconite, is more apt to complicate matters than to simplify them. It would be interesting to know whether the increase in urea obtains in these cases as largely as in ordinary pyrexia. Reasoning from the foregoing remarks, it would not be so supposed. Judging from clinical appearances only, the urine is not much altered in quantity, color, and smell. The specific gravity is increased, and in one case in four or five I have found albumin. There is doubtless loss of body-weight; of this I am satisfied, though I have never verified it by actually weighing the patient before and after the attack. The loss in weight will probably be accounted for in the large quantities of carbonic acid excreted by the pulmonary organs, the respirations being greatly increased in number, running all the way from sixty to one hundred in a minute. I had adopted the chloral

treatment of these ephemeral fevers of children from my own clinical experience and observation, but I find the same remedy recommended in these cases by Da Costa and Wilson, of Philadelphia.

The following points may be taken into consideration in endeavoring to make a diagnosis between these ephemeral fevers and others of a specific or symptomatic nature: 1. The absence of any local inflammation, or of the history of any recent injury. 2. The abrupt beginning, without prodromes; the rapid rise in temperature; the early severity of the febrile symptoms, commonly greater at the commencement than in either enteric or typhus fever. 3. The duration is very short, usually not more than twenty-four hours—oftener less than more. 4. Absence of eruption. 5. Absence of the abdominal symptoms of enteric fever and the circulatory symptoms of meningitis. 6. Absence of jaundice, or of the enlargement of the spleen and liver which marks malarial and relapsing fevers. 7. Absence of epidemics of all kinds. (Wilson, "Continued Fevers.")

INDIGESTION AND INTESTINAL CATARRH IN INFANTS.*

By E. H. BARTLEY, M. D., BROOKLYN,

ASSISTANT TO THE CHAIR OF DISEASES OF CHILDREN, LONG ISLAND COLLEGE HOSPITAL.

INDIGESTION and the various forms of diarrhoea in early life are so common in the summer months, especially in the large cities, that the term "summer complaint" is a terror to every mother. Diarrhoeal troubles of infancy are certainly very disastrous in hot weather, with the best treatment we can command.

The object of this paper is not so much to bring forward anything especially new upon the subject as to offer some brief suggestions which may serve as a stimulus for discussion.

At the outset, we must remember that we are dealing with a delicate and only partially developed organism, and not a full-grown man. In the administration of remedies and the selection of nourishment we must use the greatest care not to do harm instead of good.

We can not properly understand or treat any of the diseases of infants until we consider the peculiarities of their organization. We must remember the feeble powers of endurance, the susceptible and ever-varying nervous system, the partially developed digestive organs, and the character of the natural food and digestion of the infant. We should not forget the close relationship of the nervous system and secretion, elimination, digestion, bodily heat, etc.

The effect of the emotions upon the digestion of adults is well known; but the changes from joy to sorrow, fear, anger, or mirth in the infant are wonderfully rapid and great. Fright is not unfrequently followed by an attack of vomiting and diarrhoea, and yet it is almost a universal custom of mothers to put the child to the breast immediately after such a cause for a little unavoidable noise, although

* Read before the Medical Society of the County of Kings, June 17, 1884.

she herself would not think of eating under similar circumstances.

I have known a watery diarrhœa of unusual severity, and leading to a fatal termination, produced by a fall from a baby-carriage.

In another case, a fright caused by a dog running into the house and barking at a child was immediately followed by vomiting and diarrhœa, lasting for three weeks in spite of treatment, and terminating in paralysis of all four extremities, the upper, however, recovering after a fortnight.

We may have a diarrhœa in children from shock or of nervous origin. The danger of intrusting children to careless nurses in regard to intestinal troubles is apparent.

A second variety, closely related to the foregoing, is the diarrhœa of dentition, which Bouchut regards as a nervous diarrhœa.

A third causative agent in the production of diarrhœa in infants is the debilitating influences of miasms, polluted air, excessive heat, and sudden changes of temperature.

Any or all of these agencies may so depress the vital powers as to greatly hinder normal digestion and set up at first indigestion, and then diarrhœa, which is usually very stubborn and likely to assume the choleraic form.

Catarrh of the stomach and bowels is oftener associated with the exhibition of food than with any other cause; it may be either faulty in quantity or quality.

A condition of mild catarrh of the stomach or intestinal tract, in some portion of its length, usually precedes the severer forms of diarrhœa, and I think this is especially the case when the cause lies in the food.

When the food is administered in too great quantities, too much at a time, or too often in reasonable quantities, the effect is to put more food into the stomach than the feeble powers of the child can digest. The excess acts like a foreign body; if not rejected from the stomach by vomiting, it is passed into the intestines and there sets up more or less irritation, producing an excessive secretion of intestinal mucus and digestive fluids in an attempt to get rid of it. The peristaltic movements are increased, and an *irritative diarrhœa* is the result.

The irritation, extending to so large a portion of the intestinal canal, soon depresses the vital powers and, if not relieved, soon induces some graver nervous disturbances, or an inflammatory condition of the mucous membrane, and an attack of watery diarrhœa mixed with undigested food. The result is the same whether the food is taken at too short intervals or in too great quantity at one time. The same result may also be brought about by the exhibition of improper food.

Where mother's milk has failed, and an attempt is made to feed the child upon some substitute, either through ignorance or thoughtlessness, food is selected which the undeveloped organs of the child can not digest, and the same train of troubles is produced.

The one thing which more than any other is the cause of so much trouble is starch in its various forms. Although a few children may be found who seem to have the power of digesting starchy food, the great majority fail to do so to

any considerable extent previous to the seventh or eighth month.

When starchy food is administered in any quantity to young infants in hot weather, it is sure to remain undigested and, acting as an irritant, set up a condition of catarrh. Many children, who seem to thrive upon such a diet during the cool months, begin to fail as soon as warm weather comes.

The irritation of the constant presence of undigested food in the alimentary canal soon produces a state of chronic catarrh, with an excessive production of a tenacious mucus and exfoliated epithelium, and a modified or deficient secretion of the normal digestive fluids. This condition of affairs prevents the proper digestion of even the proper kind of food, and so increases the trouble.

Obviously, it is not wise to give remedies intended to check a slight diarrhœa under such circumstances, but rather remove the offending materials, and then give remedies to assist the digestive juices and restore the tone of the organs. Pepsin, nux vomica, bitter tonics, and mineral acids, with a little mild laxative each day, will be found most useful.

Another feature must be considered in this connection, which tends to keep up a trouble once begun, viz., the fermentation of the digested and undigested food, and of the mucus.

On opening the intestine in fatal cases of catarrh, the mucous membrane will be found coated over with this thick, tenacious mucus, which must interfere more or less with absorption of the digested food. Various secondary or pathological fermentations take place in this easily decomposable mixture of mucus, peptones, sugar, etc. The principal ones are lactic, butyric, and putrefactive fermentations—all caused by the growth of microscopic organisms of the bacteria family.

These organized ferments continually find ingress to the stomach and intestines, in a state of health as well as ill-health, with the food, but it is only when the canal contains an abundance of mucus, unabsorbed or undigested food, or when a quantity of the ferment itself is introduced with the food, as in sour milk, that their growth is so rapid as to cause trouble. The best conditions for the growth of these ferments, aside from the pabulum, are a temperature of from 95° to 105° F., absence or scarcity of oxygen, and a neutral or alkaline medium. All these conditions obtain in the intestines, and it is there that they grow most readily; the lactic ferment, however, can also grow in the stomach when the acidity is not very great, and it usually precedes the butyric.

The substances which most easily undergo lactic and butyric fermentations are the sugars, organic acids (malic, tartaric, citric, and mucic acids), mucus, and soluble albuminoid matters.

The products of the fermentation are lactic, acetic, and butyric acids, carbon dioxide, and free hydrogen.

The acids act to neutralize the alkaline juices of the intestine, decompose the already saponified fats, setting free fatty acids—oleic, palmitic, and stearic—and thus hinder the absorption of fats, which appear in the stools along with undissolved proteids and the fatty acids above mentioned.

The stools usually have a pronounced acid reaction to test-paper, and are mixed with a green substance, the nature of which is still a matter of dispute; but it is probably produced by the action of the acids upon the bile.

The gases above mentioned distend the bowel and give rise to colicky pains.

These strongly acid stools frequently show their irritating properties even upon the skin around the anus and genitals, producing a troublesome erythema.

These ferments are usually introduced with the food, a meal of sour milk containing lactic ferment often giving an overwhelming impetus to the process, and so disturbing the digestion of the infant that days, or even weeks, are necessary to correct it.

Besides these three forms of ferment, another, of an entirely different nature, should be mentioned, which frequently makes its appearance upon the tongue in the affection known as "thrush," or "sprue"—viz.: the *Saccharomyces albicans*, or *Oidium albicans*, closely allied to yeast ferment in appearance and growth. It is well known that this affection, which in itself is trivial, may cause a catarrhal state of both the stomach—probably by exciting lactic fermentation—and the whole intestinal tract. The nurse expresses it by saying that "the sprue has gone through the child."

The child becomes fretful, feverish, and debilitated. This is apt to be followed by green and "curdy" stools, colicky pains, and diarrhoea.

Some mild antiseptic wash—such as potassic chlorate, borax, and especially boro-glyceride dissolved in glycerin—will be found of most service in the local trouble. I usually give one or two laxative doses of olive-oil or castor-oil daily at the same time. Keep the mouth clean, as well as everything that goes into it. See to it that it gets no sour milk. Sarcinic, alcoholic, and acetic fermentations are not much to be feared.

Still another form of fermentation is to be recognized, known as the putrefactive fermentation. This takes place principally in proteid matters, breaking them up into fats, tyrosin and leucin, ammonia, sulphureted hydrogen, carbon dioxide, hydrogen, and nitrogen. These gases are troublesome in causing flatus and colicky pains. This form of fermentation is most active when indigestion is accompanied with constipation, or in the more chronic forms of catarrh without profuse diarrhoea. It is evident that, at the beginning of an attack of indigestion caused by a meal of sour milk, starch, or any other indigestible food, if an unirritating laxative is given in sufficient quantity to empty the bowel, no serious trouble may be expected. But if, on the other hand, considerable time is allowed for the development of these ferments and the other accompanying changes, a few doses of bismuth and opium will not correct the trouble. It will frequently be found that such a condition as eight or ten small stools, composed of white, curdy-looking lumps mixed with green tenacious mucus, and sometimes accompanied by some watery discharge, will persist in spite of all ordinary remedies, for weeks.

In such cases astringents do little or no good, and opium is often worse than useless, it is actually harmful, while a few

doses of benzoate of ammonium or salicin will be of great service.

In the majority of the cases such as I have been describing, the seat of the trouble is in the small intestines.

In order to treat successfully the ordinary cases of diarrhoea and indigestion in infants, then, we must inquire into the etiology, the state of the nervous system, the quality, quantity, and method of giving the food, whether the trouble as it now exists is due to failure of the stomach to digest, or an interference with intestinal digestion by acid fermentations, to miasms, or air polluted with decomposing garbage, or the result of the combined effect of impure air, excessive heat, and improper food. The treatment must be directed to the cause and not entirely to the result. The treatment is always of two kinds—viz.: hygienic and medicinal. In many cases of indigestion, with not too severe a diarrhoea, proper dietetic and hygienic treatment is all that is necessary, and even some of the severer cases, as Biedert has shown, may be successfully treated in this way. The subject of artificial feeding of infants does not properly come within the scope of my paper, but some reference to faulty methods, as causing intestinal disorders, must be made. Here we come upon ground of dispute, bad theorizing, and worse practice.

Opinions as well as practice vary greatly in the dietetic treatment of children. The principal causes for this difference of opinion which may be based upon experience are: 1. Differences in climatic influences; in the state of the weather at the time. A favorable turn of the weather may make a series of successful cases where an excessively hot and sultry day would have proved disastrous to all. 2. Differences in hygienic surroundings. 3. Differences in general vigor of the children affected, due to their station in life. 4. Individual differences in constitution, vigor, development, etc.

The following are a few brief statements which may be found useful in the feeding of infants:

1. The best food for young infants is average mother's milk.

2. The most available substitute for mother's milk is cow's milk, so diluted and modified as to suit the digestive powers of the infant.

3. Chemical analysis of the food alone is not always a safe guide as to the digestibility of any given artificial food—i. e., it is not enough that the analysis shall show the proper proportion of albuminoids, fats, sugar, salts, etc. The question of the easy digestibility of these ingredients must also be considered.

4. Over-feeding is a very harmful practice, and must be prevented.

5. The hygienic surroundings and the development of the infant will in a measure determine the character of its food. A backward, undersized, rachitic or tubercular child in a tenement-house will require more care in feeding than a healthy child in an airy dwelling. This is a fact often overlooked by physicians as well as by mothers.

6. Greater care must be exercised in the feeding of infants during the hot than in the cool months, and foods containing much starch should be avoided.

How shall we get rid of the green, curdy-looking stools? 1. Prevent hard curds by diluting the milk with some bland, unirritating or mucilaginous substance, such as barley-water, or, much better, gum arabic, albumen, or gelatin-water. This seems to prevent a tough, hard coagulum from forming in the stomach, and allows of more perfect digestion of the casein. Barley-water has not been so successful in my hands as I could wish, although I have seen it do good in some cases.

The addition of starch and bodies containing starch I entirely prohibit in children under a year old. And here let me say that some children are as fully developed at nine months as others at eighteen, and must be treated accordingly.

Starch may be used as a diluent if it is previously boiled and liquefied by malt or pancreatic extract, but I much prefer either gelatin or gum arabic, because these substances, when mixed in solution with the milk and then coagulated by dilute acid, are carried down with the casein in a much less tenacious mass, or are not precipitated at all in some cases, but behave like mother's milk. My direction to the mother is usually to make the solution of gum arabic or gelatin by adding a teaspoonful of the clear gum to a teacupful of warm water, and then to add this to the milk in the desired proportion, say 1 to 2 or 3 of milk. I have seen two patients do well and recover in the heat of July by simply letting them suck sticks of gum made by the confectioner of pure gum arabic. If the child is at the breast, I give the above-mentioned diluent, immediately before nursing, in three- or four-teaspoonful doses.

There is one point which I would urge as very important in all cases of indigestion in infants where we find great greediness for food: that they be allowed to feed only once in about three or four hours. A little cool water may be given in the intervals if the child seems thirsty. This greediness in children is always pathological, and must not be indulged; and it will be well if the nurse obeys your orders in this regard. I insist upon this point. In cases of entero-colitis with free watery discharges I have learned that great benefit will be derived by freely administering cool water. I have also found it an excellent plan to exclude milk from the diet for a day or two in those sudden choleraic cases with tendency to collapse, and to give raw meat-juice with a little salt and brandy instead.

The meat-juice may be given very freely, and it is seldom rejected. After the expiration of about forty-eight hours, and after recovery has begun, there is nothing better than milk partly or wholly pancreatized. This measure should not be neglected in severe cases, or where the powers of digestion seem to have become very feeble. In the main I prefer good fresh milk to condensed milk, although this is a matter of experience; some patients will do better on condensed milk, while others will do better on diluted fresh milk. The more I see of digestive troubles in hand-fed babies the more I am convinced that the proper feeding of any particular infant is a matter of experiment and not one of rule. Of course, we can lay down rules which will apply to a large majority of cases, but some cases will be met with which defy all rule. Pure and cool air are of the

first importance, and a change of air is almost always beneficial.

Medicinal Treatment.—In regard to the administering of remedies to children, I would remark that it is advisable not to give powders, but suspend the powder in a liquid, so that you can be sure of the dose given.

Astringents in the early stages of gastro-intestinal catarrhs are uncalled for, and generally injurious.

Opium before the stage of inflammation I rarely give, except an occasional dose of paregoric to secure rest.

In *irritative diarrhoea* the following paste will be found very useful:

R Ol. ricini,	f 3 iv;
Bismuth. subnitratiss,	3 ij;
Magnes. carbonatis,	3 j;
Sacchari,	3 ij;
Ol. anisi vel ol. menth. pip.,	℥vj.

M. Sig. 3 j for a child of six months to one year.

Or we may use:

R Vin. pepsini,	f 3 jss.;
Bismuth. subnit.,	3 ij;
Glycerini,	3 iv.

M. Sig. 3 j at a dose.

When inflammatory diarrhoea has begun, it is well to give a dose of castor-oil to begin with, unless it is certain that no irritating substances or undigested food remain in the canal. This is then to be followed by the usual remedies, including some form of opium. I usually prefer Dover's powder for children over ten months, and the deodorized tincture for those under that age. In cases where there is a great deal of fermentation, or where the trouble can be traced to sour milk, where the stools are very acid and the breath has a sour smell, the best remedy is benzoate of ammonium or of sodium, boro-glyceride, calomel and chalk, salicin, or salicylate of sodium. This last remedy I regard as rather too irritating for general use.

An alkaline watery discharge is always serious, and demands prompt attention. Stimulants will be found necessary in these cases, and the treatment must be with opium, the mineral acids, and astringents. Instead of giving alkalies in these cases, the mineral acids, nitric or aromatic sulphuric, with opium and astringents, will be found most useful. I should advise, therefore, testing the reaction of the discharges in all cases of watery diarrhoea. I have more than once seen a marked change for the better a few hours after a change from the alkaline to acid solutions. The acid, with the vegetable astringents, checks the discharge, lends tone to the capillaries, and stimulates the mucous membrane to a healthier action. Where the seat of the trouble seems to be in the colon, opium, quinine, subnitrate of bismuth by the mouth and by injections, and alcohol are to be recommended.

The opium may be pushed to the extreme of toleration in colitis, but should be used with caution where the trouble is higher up.

For the pyrexia in these disorders I use frequent cold-water spongings, unless the extremities are cold; in this case the warm bath is more beneficial. In the more chronic

forms, following the acute attacks, benzoate of sodium or of ammonium, acetate of lead, and solution of nitrate of iron are to be preferred.

In the purely nervous diarrhœas, bromide of potassium or chloral hydrate will be more beneficial than any other treatment.

A CASE OF DERMATITIS HERPETIFORMIS (BULLOSA).

By LOUIS A. DUHRING, M. D.,

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ON February 3, 1879, the patient, the notes of whose case are about to be given, was sent to me by Dr. H. G. M. Kollock, of Newark, Del., who in his letter stated that the disease was regarded as pemphigus. The man had been under treatment for some months, during which period he had taken quinine, iron, and arsenic, and had used varied remedies locally, all without relief. Dr. Kollock's letter states: "He has not had a full crop of bullæ for about two weeks, prior to which they would appear in great numbers every two or three days. He has never been entirely free from them."

The patient, Newton B. E. by name, was admitted to the University Hospital, at which date the following record was made: He is sixty years of age, tall and slender, somewhat emaciated, debilitated, and nervous; he is a native of Delaware, a shoemaker by occupation, and is married. There is no special family history. He never suffered any disease of the skin, except occasional attacks of inflammation from poisoning, until eight months ago, when the present disease appeared. He was at the time in average health, and could attribute the outbreak to no cause. It began about the ankles and feet with swelling, heat, and violent itching; the following day eruption manifested itself on the arms and around the neck, and later on the trunk. Several household remedies were applied, but the disease spread until at the end of a week he was well covered with a mixed eruption consisting of papules, vesicles, and blebs, the latter predominating, and some being as large as a walnut. Upon bursting or being ruptured, the walls adhered to the skin and formed crusts. Successive crops of blebs continued to appear until a fortnight ago—in all, during a period of eight months. He has lost flesh, as much, he thinks, as fifty pounds. A new outbreak of eruption is now manifesting itself.

Present Condition.—The disease of the skin is almost universal, involving the greater part of the general surface from the scalp to the soles of the feet. It is made up of variously sized and shaped *vesicles*, *blebs*, and *pustules*, in all stages of evolution.

The vesicles predominate and vary in size from a pin-head to a pea, the majority being as large as small peas. They are notable for their irregularity of shape, being for the most part very irregular, and in many instances angular in outline. Some are raised to the height of a line, others are flat. They are distended and have a glistening, glazed look, and, as a rule, are not surrounded by any areola, rising abruptly from the surrounding healthy skin. They are yellowish and contain serous contents, as in the case of the early stage of herpes zoster.

The blebs, some raised, others inclining to flatten, are met with here and there on the neck, arms, thorax, abdomen, thighs, legs, feet, and hands. Some are as large as a pigeon's egg. They are manifestly advanced stages of the vesicles, or at least often grow from these lesions. They are as a rule tensely dis-

tended and have clear contents; some show cloudy contents and are flaccid. They do not rupture spontaneously. Their contents are alkaline.

The pustules are present in like manner here and there, distributed over the same regions. They are distinctly pustular, having *whitish* contents and more or less inflammatory areolæ; are small, raised, irregular in outline, though less so than in the case of the vesicles, and have a "puckered" or "drawn up" appearance. Excoriations and blood-crusts are conspicuous, and are plainly the result of prolonged scratching. Yellowish, brownish, "dirty-looking" patches of pigmentation, giving the skin the appearance of chronic pediculosis corporis, are also prominent symptoms. *The itching and burning are most distressing.* They interfere with sleep at night. New lesions in great numbers are beginning to form. Some of the earliest are flat *papulo-vesicles*. They can be felt with the finger as small circumscribed infiltrations even before they become visible. In some localities there is a marked tendency for all the lesions to group, two, three, or four being crowded together into a cluster; in other places they are disseminated. Here and there *blebs* are surrounded concentrically by a variable number of small, flat, whitish pustules of the size of pin-heads, making a striking combination.

February 7th.—During the last three days lesions of all kinds have appeared, accompanied by intense itching and burning. Some of the blebs have attained the size of walnuts. On the forehead an abundant crop of variously sized and shaped herpetic vesicles are present.

28th.—A fortnight ago the attack was at its height, vesicles, blebs, and pustules, as well as intermediate forms, existing in profusion. Almost the whole integument was invaded, scarcely a square inch being exempt. The blebs frequently reached the size of a hen's egg; the pustules flattened, seldom exceeding the size of a dime or a quarter-dollar. They spread peripherally, inclining to dry and crust in the center. The course of both these lesions was rapid, disappearing in four or eight days, followed by crusting and pigmentation.

The general condition remained fair, there being no marked febrile disturbance, although the appetite was impaired, and the patient was weak, nervous, and much distressed in mind and body. With the cessation of new lesions the itching and burning declined, but did not leave entirely. The treatment consisted of a generous diet, with saline laxatives and small doses of arsenic and strychnia, together with anti-pruritic lotions of carbolic acid and tar. The man remained in the hospital several weeks longer, during which time he improved with remarkable rapidity. I can not, however, attribute the recovery altogether to the remedies used, knowing well as we do the singularly arbitrary course the disease usually pursues.

About three years afterward (December 20, 1882) I received a letter from Dr. Kollock (under whose care the patient had since been), stating that he had not seen the man for a year, but that, "according to last accounts, he had improved markedly in general health as well as locally under a tonic treatment. The eruption has appeared at longer intervals, and is confined to smaller areas. He seemed to derive great relief from the application of a lotion containing corrosive sublimate and alcohol." Since this date I have heard nothing.

The case represents more particularly the bullous variety of the disease, although its multiformity, as in almost all instances, was repeatedly shown. As I have so recently described this remarkable disease in a paper* read before the

* Abstracts may be found in the "N. Y. Med. Jour.," May 17, 1884, p. 562, and in the "Phila. Med. Times," May 17, 1884, p. 603.

American Medical Association, comment here is scarcely necessary. It may be stated, however, that the case illustrates the vesicular and bullous lesions as they usually occur in the course of the disease, the latter predominating. The resemblance to pemphigus is obvious, but I think it will be seen that the process is different, and that it can not be viewed as a variety of this disease.

A CASE OF GASTROSTOMY, WITH REMARKS ON THE AFTER-TREATMENT OF THE OPERATION.

By G. E. BUSHNELL, M. D.,
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The patient, a man fifty-eight years of age, presented himself for treatment in December, 1881. Difficulty in deglutition had first been noticed the preceding August. The dysphagia had rapidly increased, and for two months he had been restricted to a diet of liquids. There was a history of syphilis. Upon exploration of the œsophagus, a stricture was encountered at a point about opposite the cricoid cartilage, which admitted with difficulty Otis's bulbous urethral sound No. 17. No tumor could be detected by palpation of the throat. The stricture, which was very firm and about half an inch in length, was gradually dilated by means of the bulbous urethral sounds until the tube of a stomach-pump passed it readily. Deglutition was so much improved by the dilatation as to negative the possibility of the existence of another more deeply situated stricture. After passing the stricture, the dilating instrument seemed to move freely in a cavity; yet, when pushed on, it met with resistance, and the patient complained of great pain and an intolerable tearing sensation. The stricture tending to contract rapidly, it was thought advisable to dilate it more widely than could be done by means of the tube of the stomach-pump. No suitable instruments being at hand, a very efficient dilator was improvised by the use of the transparent part of what is popularly known as "lemon candy," which was softened by heat and molded into the proper shape about the looped extremity of a stout iron wire. The "candy dilators" were well borne, and by their use the stricture was gradually dilated until its caliber exceeded an inch in diameter. No hemorrhage and but little pain ever resulted from the dilatation. Suddenly, without apparent cause, the patient began to expectorate great quantities of odorless pus; the act of swallowing excited such spasms of choking that food could no longer be given by the mouth, and there was complete intolerance of any instrument. The patient stated that he had had similar but less severe attacks, which lasted a week or longer. He was put to bed and fed *per rectum* with peptonized foods. The expectoration gradually diminished in amount, but became dark-colored and fetid. Swallowing continued to be impossible, and the attempt to pass a small tube through the stricture, for the injection of food, was unsuccessful. The patient, who was failing rapidly, now urged the performance of gastrostomy, which he had previously refused. The operation was performed by the writer on February 24, 1882 (the twenty-fourth day of exclusively rectal alimentation), with the assistance of Dr. J. C. McGuire, Acting Assistant Surgeon, U. S. Army, and Dr. G. W. Monroe, of Bozeman, M. T. The patient having been etherized, the usual incision was made parallel with the borders of the ribs of the left side, and all hemorrhage was carefully checked before dividing the transversalis fascia. The peritoneum, which was separated from the overlying tissues at least half an inch by atmospheric pressure, was slit up on a director and its edges grasped by forceps. The

abdominal walls, hitherto much sunken, having risen by virtue of their elasticity now that air was admitted into the peritoneal cavity, the latter became literally a "cavity," at the bottom of which the left lobe of the liver and the stomach were visible lying at the depth of more than an inch. Air passed in and out of the wound with an audible whizz at each respiration. The stomach was drawn up and found to be flaccid and voluminous, and its walls exceedingly thin. It was attached to the edges of the wound by sutures of silver wire, and a loop of silk was passed through the center of its exposed portion at the situation of the proposed opening. A small rod was inserted into the loop to aid the stitches temporarily in supporting the organ. Antiseptic precautions were strictly observed during the operation, and the carbolic spray was kept playing in the room, but not directly upon the wound. Temperature of patient at completion of operation, 4 p. m., 96.4° F.; pulse 96. At 7 p. m., temperature 97.5°; pulse 104. A few drachms of peptonized beef and milk were introduced into the stomach through a hypodermic needle, as suggested by Langenbuch. At 9.30 p. m., temperature normal, pulse 88. Four ounces of the same mixture were injected through the needle the next morning (February 25th), and this injection was supplemented by enemata of peptonized food and water during the day. The wound appeared healthy, and adhesions were forming rapidly. The general condition of the patient was not worse than before the operation. On February 26th an attempt to introduce the hypodermic needle produced a slight hemorrhage, apparently from the adhesions, and the procedure was abandoned. A small incision was made through the wall of the stomach and a new soft urethral catheter was inserted, tied in, and closed by a pinch-cock. Through this tube small quantities of peptonized food were frequently administered. The patient seemed to gain slightly in strength, but was tormented by a severe spasmodic cough, and complained of increased pain in the throat. On February 28th some of the stitches which had begun to cut out were removed. The stomach-tube, which at first fitted tightly, gradually became loose and permitted leakage of the contents of the stomach.

March 2d.—The patient not so comfortable. At the night-dressing, stomach seen to have settled down somewhat in the wound. The adhesions, however, were still firm. The stomach contents, of a dark-brown color and offensive odor, oozed freely from the opening. They were removed and the stomach washed out by means of a siphon.

March 3d.—Patient sinking rapidly. Temperature, which had varied but slightly from the normal since the operation, at 10 a. m. was 104.5°, pulse 156; 12.30 p. m., temperature 99.6°, pulse 130; 5 p. m., temperature 102.6°. Marked dyspnea developed about noon and continued until the patient's death at 6.15 p. m. An autopsy was made the next day in the presence of Dr. McGuire and Dr. Monroe. Body much emaciated. Left lung normal; right lung contained an old cavity in apex the size of a hickory-nut. Pleuritic adhesions at this point. Air-cells infiltrated with pus in numerous small and distinct areas throughout middle and inferior lobes ("Schluckpneumonie" from tracheal perforation?). Aortic valves calcified. A large, tough, yellow blood-clot extended through right auricle and ventricle and far into pulmonary artery. Deep lymphatic glands of thorax black and hard like lumps of coal. Liver and spleen normal. Capsule of right kidney adherent; otherwise kidneys apparently healthy. Local adhesive peritonitis about wound of operation uniting stomach to abdominal parietes. The remainder of the peritonæum perfectly healthy. Stomach, much dilated, contained several ounces of brownish fluid. Its walls very thin. Inflammatory thickening of the part comprised within the sutures. Larynx normal. In the œsophagus a stricture one third of an inch in diameter, commencing at a point

slightly below the level of the cricoid cartilage and extending downward half an inch. The tissues which formed the stricture of a bluish-gray color and very firm, almost cartilaginous in consistency. Below the stricture, for a distance of nearly four inches, the walls of the œsophagus, in their entire circumference, eaten away by deep, ragged ulcers, with gray floor dotted with granular bodies. Small perforation into trachea in the median line. Posteriorly the disease extended to and involved the vertebral periosteum. The œsophagus, trachea, and larynx have been presented to the Army Medical Museum. The specimen is No. 1,727 of the Medical Section.

An examination of the after-history of patients subjected to gastrostomy when much reduced by starvation often leaves the student in doubt whether any benefit has been derived from the introduction of food into the stomach after the operation. Those who escape the dangers of the operation soon die of exhaustion, for which the progress of the primary disease does not always furnish an adequate explanation. The progressive failure of the vital powers is largely to be ascribed to the difficulties which the enfeebled stomach encounters in resuming its functions. Peristalsis is interfered with by the stitches and the broad adhesions. Adhesions are a well-recognized cause of dilatation, and the starved stomachs of gastrostomized patients must be peculiarly unfitted to overcome such hindrances to their activity. The exposed portion of the organ becomes more or less inflamed from exposure to the atmosphere and the irritation of the wound discharges. Its circulation is impeded by the stitches which surround it. The circulation of the entire stomach becomes less active proportionately with the diminution of the muscular contractions. Statistics showing four deaths from gangrene of the stomach in one hundred and thirty-seven cases of gastrostomy (Professor S. W. Gross, "Medical News," December 1, 1883) prove that it may even be completely arrested. The innervation of the stomach is probably affected by the irritation of the stitches and the unwound exposure to the air. Amid such disturbance neither the secretion of gastric juice nor the absorption of peptones can be expected to take place normally. There is danger that food will gravitate into the splenic end of the organ and remain there to ferment.

That stagnation of the stomach contents does often occur has been shown in the history of many cases. To avoid this, and to assist the feeble digestive powers as much as possible, I would make the following suggestions, derived for the most part from the treatment of dilatation of the stomach: Let all food be thoroughly converted into peptones before administration. After forty-eight hours place the patient upon his right side after feeding, that the food may gravitate toward the pylorus.

As an experiment, it would be well to add hydrochloric acid to the food, if Leube's view is correct—that it is increase of acidity which enables the contents of the stomach to pass the pylorus. Wash out and empty the stomach frequently by means of a siphon. To spare the stomach, supply the water needed by means of enemata. It is, perhaps, worth noting that my patient, who received a quart of water daily *per rectum*, with bits of ice to suck *ad libitum*, never complained of the thirst which surgical writers speak of as adding so much to the sufferings of œsophageal stricture.

THE ARCHITECTURE OF THE SPINAL CORD, AND ITS RELATIONS TO MEDICINE.

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MEDICAL SCHOOL AND HOSPITAL.

(Concluded from page 37.)

It will be seen in this diagram that the motor tracts composing the column of Türcck and the crossed pyramidal tract of each lateral half of the cord (if traced upward in the diagram) become united in the medulla (one decussating and the other not) and then pass to the cerebrum. Each of these subdivisions of the motor tract gives off branches to the gray matter of each spinal segment. These branches unite with the motor cells of the anterior horn of the corresponding side through the net-work of Gerlach (Fig. 21). Subsequently these branches are continued from the bodies of the motor cells to the anterior root of the spinal nerve of the same side, as the "axis-cylinder process" of each cell. The motor tract derived from the cerebrum, therefore, is *constantly depleted*, in regard to the number of fibers of which it is composed, as it descends the cord. It finally terminates in the motor cells of the last spinal segment. By the interpolation of a motor cell for each fiber in the conducting path from the brain, every spinal segment is enabled to exert an *automatic action* upon the muscles supplied by its motor filaments; yet, at the same time, the brain can overpower this automatism when necessary, by means of its connection with the spinal cells, and exercise its control over the same muscles independently of the spinal segment. In some forms of disease, in which the controlling influence of the brain is impaired or destroyed, the spinal segments (left free to act without restraint) give rise to an exaggeration of the tendon-reflexes. This condition is of great clinical interest.

In disease of the spinal cord, all the muscles associated with the segments of the cord attacked are not equally paralyzed or atrophied in some cases, thus demonstrating that some are more easily disturbed by central influences than others. Allen has collected several reported cases of special interest in this connection: That reported by Charcot and Jeffroy of infantile paralysis, followed by death in the fortieth year, exhibited atrophy of both psoas muscles, the pectoralis major, deltoid, and triceps of the left side, and the deep flexors of the fingers of the right side. A case reported by Barth showed an atrophy of the supinator of the left forearm, and the quadratus femoris and gastrocnemius of both sides. Vulpius mentions a case in which all the muscles of the right leg, except the extensor communis digitorum, were fatty; in the thigh, the rectus femoris and the vastus internus were fatty, and the vastus externus was not.

Certain clinical facts can be adduced to support the view that the extensor nerves are associated with centers within the cord that become exhausted under depressing influences, as in the case of lead and diphtheritic poisoning, sooner than the centers governing the flexors. It is also well recognized that the flexor muscles are the chief agents in pro-

ducing various forms of post-paralytic contracture and deformity. When descending degeneration exists high up in the fibers of the crossed pyramidal columns, the arm gradu-

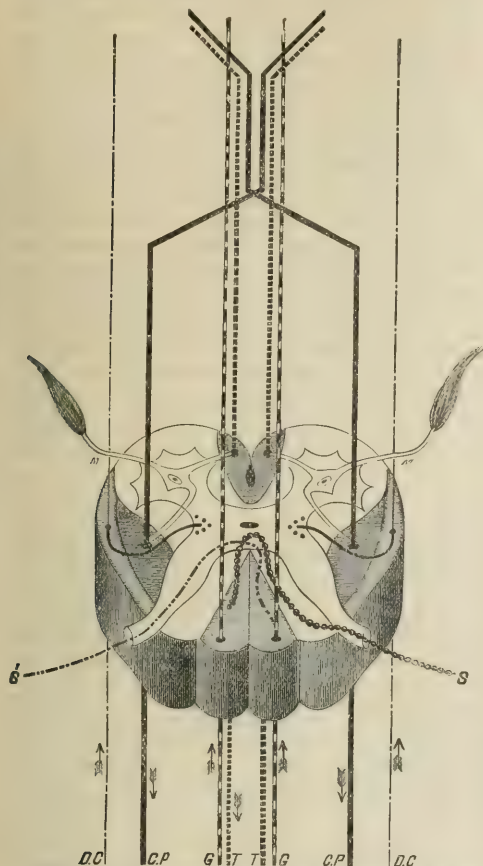


FIG. 21.—A DIAGRAM DESIGNED TO ILLUSTRATE THE CONNECTIONS OF THE MOTOR AND SENSORY CONDUCTING TRACTS WITH THE SPINAL NERVES. (Modified from Bramwell.) The lettering is the same as in Fig. 20. M, motor fibers of the anterior root of a spinal nerve; S, S', sensory fibers of the posterior root.

Note that the course of S and S' are not the same. Some sensory fibers pass through the posterior horn of the spinal gray matter, and others through Burdach's column. The direct cerebellar column is connected with Clarke's column of cells. The two pyramidal tracts are united with the motor cells of the anterior horns of the spinal gray matter.

ally becomes flexed upon the chest, the forearm becomes flexed upon the arm, and the hand flexed upon the forearm. Subsequently the lower limbs exhibit similar effects of muscular contracture, flexion again predominating over extension. The normal excess of power of the flexors over the extensors may partly explain the characteristic deformities that ensue when the fibers of the lateral columns are involved in degenerative processes, but we are forced to recognize also a peculiar susceptibility of the extensor nerves to impairment of their function from causes that do not affect the flexor nerves to the same degree, if at all.

The diagrams represent the *sensory nerve-fibers* as undergoing a total decussation and passing upward to the brain in the column of Goll of the opposite half of the spinal segment. It shows that the sensory nerve-fibers pass first from the posterior root to the column of Burdach; and, after traversing its substance, a decussation by means of the gray commissure of the cord takes place. Now, this arrangement probably admits of some modification. It is by no means proved, as yet, that all of the sensory fibers of the cord decussate. Again, it is still a matter of uncertainty where the main sensory tracts can be definitely placed, and whether more than one may not exist. Finally, some clinical facts as well as those lately obtained by experimentation favor the view that the sensations of pain, touch, and temperature do not follow the same paths of conduction in the spinal cord. It is highly probable that all the sensory nerves eventually decussate, but it is believed by many physiologists of the present day that some of the sensory

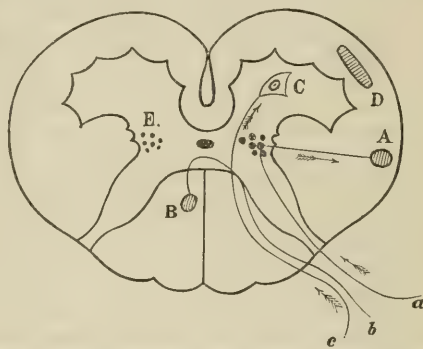


FIG. 22.—A DIAGRAM DESIGNED BY THE AUTHOR TO REPRESENT THE VARIOUS PATHS OF SENSORY CONDUCTION IN THE CORD.

A, direct cerebellar column, receiving fibers from Clarke's column (E) of the same side; B, Goll's column, receiving fibers from the opposite nerve-root by means of the posterior gray commissure; C, ganglion-cell of anterior horn joining with its sensory fibers; D, sensory tract of Wroeschloff, Gowers, and Ott, in the lateral column of the cord.

fibers ascend for a greater or less distance within the substance of the corresponding lateral half of the cord before they cross to the side opposite to that upon which they entered it. Some authorities also believe that the sensory nerves connected with the tendons, muscles, and fasciæ pass through Burdach's column of the same side, while those connected with the skin traverse the gray matter of the posterior horn. They thus endeavor to explain the abolition of the deep or tendon reflexes in locomotor ataxia, because that condition is characterized by a change in the columns of Burdach that would tend to impair the conduction of any filaments passing through its substance.

We may, therefore, draw the following deductions:

1. The fibers of the nerve-roots eventually pass to and enter the gray substance of the cord, but not by the same channels in all cases. In the case of the posterior roots, some fibers probably form an exception to this rule.
2. The fibers of the anterior roots become joined to the processes of the nerve-cells of the gray matter. This state-

ment can not be made with the same degree of positiveness in respect to the fibers of the posterior root.

3. From the ganglion-cells of the gray matter the fibers of the anterior roots pass to the brain through the white matter by one of three channels: 1. By entering the lateral columns of the same side (the so-called crossed pyramidal column). 2. By entering the anterior column of the same side (the column of Türck). 3. By passing to the opposite anterior and lateral columns through the white commissure of the cord (decussation within the cord). Fig. 21 shows the first two, and Fig. 17 the third, in a diagrammatic way.

4. The processes of the ganglion-cells of the cord take every variety of direction. Some anastomose with other cell-processes of the same side; some join with those of the opposite half of the cord, by means of the gray commissure; some join directly with the fibers of the nerve-roots; some join with the fibers of the main conducting tracts that are connected with the brain; while a few pass into the white columns of the cord and then appear to ascend within them.

5. Individual fibers of the anterior and posterior nerve-roots probably meet each other indirectly by means of the processes of the nerve-cells.

6. A few fibers of the anterior roots appear to traverse the gray substance and then to pass into the anterior part of the lateral column. Their function is not known.

7. The fibers of the posterior roots probably reach the cells of the posterior horn by means of a net-work of fibers.

8. Fibers pass from Clarke's column to the direct cerebellar column of the same side.

9. Some medullated fibers appear to arise directly from Gerlach's network of fine fibers, rather than from a ganglion-cell directly.

Brown-Séquard was led to believe, before sensory nerves to muscular tissue were demonstrated, that the paths of the so-called "muscular sense" entered at the anterior nerve-roots and passed up in the anterior columns of the gray substance of the cord. As this is not now believed to be true, it is not to be classed as an exception to all other paths of sensory conduction. It is probable that the fibers concerned in the sensation of touch and those of muscular sense do not decussate within the cord (Schiff and Brown-Séquard).

Clinical Reports.

NINETY-NINTH STREET RECEPTION HOSPITAL.

Rattlesnake Bite.

(From Notes kindly furnished by Dr. A. M. SPALDING, House Surgeon.)

J. R., a powerful man, forty-seven years old, of Irish birth, a professed "snake-charmer," was bitten by a rattlesnake at about 4.30 P. M., on Sunday, July 13, 1884. The reptile was of the variety known as the Mexican "diamond snake" (*Crotalus adamanteus*), said to be nearly ten feet long and as big round as the arm of a well-developed man. The patient was accustomed to handling the snake in question. Having relinquished his hold of the snake's neck, in order to demonstrate to the bystanders

that the fangs had not been interfered with, he attempted to regain his hold by sliding his hand along the reptile's back, when the latter turned upon him and inflicted a wound upon his right hand, on the dorsal aspect, between the first and second metacarpal bones. The man at once drank a pint of whisky, and a physician made three incisions, laying the wound open. In the course of half an hour after the bite was inflicted the man fainted and was carried to a police-station. There he vomited the whisky, and at once drank a quart more. Two hours after the injury the ambulance was sent for.

The ambulance surgeon, on his arrival at the station-house, found the man covered with a cold, clammy perspiration, his aspect being that of great anxiety and despair. His mind was clear; his pulse was rapid, feeble, and almost imperceptible; his respirations were hurried and labored. His restlessness was extreme, and he was unable to remain in one position more than a minute at a time. He complained of a feeling of great constriction across the chest, and of terrible pain near the umbilicus. The hand was swollen, of a purplish color, had a peculiar odor, and was bleeding freely from the incisions. The swelling extended only to the wrist. The hand felt cold to the touch. The patient complained of agonizing pain extending up the arm.

On his admission to the hospital, a half-hour later, his condition was about the same. He was put to bed, and began at once to have involuntary evacuations of the bowels—at first solid, then solid and liquid feces, and finally pure blood of an arterial color. This purging continued, at intervals of a few minutes, for two hours; then the movements gradually became less frequent. With the purging there was constant vomiting—first of the contents of the stomach, and then of blood, also of a bright color. By this time the swelling had extended up the arm to the elbow, and on the palmar surface the tint had gradually changed from a marble hue to a darker color; the color of the hand was also becoming darker. The glands in the axilla were swollen and very painful; the man's voice was husky and weak; his tongue was dark-red and dry; his pupils were dilated, and did not respond readily to light. The depression of all the vital forces was more marked; the radial pulse could hardly be felt; the restlessness and all the symptoms before specified had also increased; there was constant thirst, with agonizing pain in the arm, extending up over the chest and stomach, as well as over the back in the region of the kidneys.

A hypodermic injection of liquor ammoniac—ten minims—was given immediately on his admission, and seemed to strengthen the pulse a little. Besides this, frequent subcutaneous injections of whisky were given—thirty minims in each—until about two fluidounces had been given in all. At this time it was impracticable to administer anything by the mouth or by the rectum, on account of the vomiting and purging. There was little change in his condition through the night, but toward morning he appeared to be weaker. The respirations were still rapid, but not quite so labored.

About noon on Monday, the day after his admission, the pulse could be felt only as a little fluttering; weakness was more marked; the patient spoke with difficulty, and gave up all hope of recovery. The swelling of the arm had increased, and now extended to the trunk, the color being dark-bluish, due to effusion of blood. This discoloration also extended over the right side of the chest. There was no delirium, and the mind remained clear to the last. He gradually grew weaker, all the symptoms continuing, until he died, about 8 o'clock in the evening, of exhaustion and heart-failure, the heart ceasing to beat several seconds before the respiration stopped. During the day, the vomiting and purging having subsided, he drank about a pint

of milk, and throughout the day he quenched his thirst with frequent draughts of hot tea.

Post-mortem Examination, forty hours after death, by Dr. MICHAEL J. R. MESSEMER.—There was great extravasation of blood into the tissues of the arm, extending about the shoulder, and over the right side of the body, down to the groin in front, as if from severe bruises. Both lungs were congested and oedematous, the congestion being most marked in the upper lobe. The heart was pale and flabby, but contained neither ante-mortem nor post-mortem clots. About a fluidounce of blood was found in each of the pleural cavities, and half an ounce of serum in the pericardium. The stomach was highly congested and partly filled with blood. The right kidney was of one third the normal size, the left kidney being considerably larger than normal. The spleen was normal; the liver congested, but otherwise normal. The brain was heavy and healthy, with slight congestion and extravasation, and gave evidence of an old pachymeningitis. Death seems to have been due to syncope, from septicæmic gases entering the right auricle by way of the vena cava.

[By the courtesy of Dr. Messemer, to whom we are indebted for the notes of the post-mortem examination, we hope to be able to give the results of the examination of the blood in a future issue.]

Book Notices.

The Hip and its Diseases. By V. P. GIBNEY, M.D., Professor of Orthopaedic Surgery in the New York Polyclinic, etc. New York: Bermingham & Co., 1884. Pp. 412.

For the general practitioner, the term hip-joint disease includes almost every affection of the articulation, and he can find but comparatively little on the subject in works on general surgery. There is to many something mysterious about diseases of the hip, and, although their knowledge of affections of the other joints may be clear and correct, so soon as a case of lameness from trouble with the hip joint comes under their observation they are apt to be driven in despair to an instrument-maker's catalogue for aid. Up to the present time, we do not know of a single volume that treats of diseases of the hip—and they are many—in a thorough manner. Most of those that have appeared from time to time are far from satisfactory, many of them, indeed, seeming to have been written chiefly to advertise some new splint. The book now under consideration, therefore, written by one who has had a vast amount of clinical experience in the subject, calls for something more than a brief notice.

The author tells us in the preface that the hospital with which he is connected "is known as one of extreme conservatism," and that the plan of treatment followed out corresponds with a strict definition of the term expectant.

The book is divided into eighteen chapters, and is embellished (?) with sixty-four woodcuts. The first, or introductory chapter, is devoted to a general outline of the work, and contains an excellent schedule for reporting cases. Chapter II takes up the anatomy of the hip joint, and is compiled from the works of Gray, Quain, and Morris. In Chapter III sprains and contusions of the hip are considered, and then diagnosis and treatment. Chapter IV deals with those obscure affections, the neuroses of the hip. In the diagnosis of these troubles the author lays great stress on the importance of spinal tenderness and a neurotic family history. Chapter V is devoted to rheumatism of the hip and to chronic rheumatic arthritis. Under

the first of these two heads the author includes myalgia, which we think somewhat confusing. The term he employs should be restricted to articular troubles. He objects to the word myalgia, but uses none other in its place. Chapter VI is entitled "Coxo-femoral Periarthritis." In Chapter VII bursitis is treated of—a subject of great interest, and one to which sufficient attention has not been paid. Chapter VIII deals with acute primary synovitis. In Chapter IX the author treats of acute primary epiphyseitis, meaning "an acute primal lesion at the diaphyseo-epiphyseal junction," the osteitis extending quickly and destructively from this point to the epiphysis, so that necrotic diastasis soon follows, and the force of the lesion is practically spent upon this portion of the femur, shortening being an early symptom. Traumatic diastasis of the head of the femur, a very rare occurrence, is also considered. Periostitis and malignant disease of the hip are considered in Chapter X. In the author's experience, the former has been due to traumatism.

Chapter XI is devoted to the pathology of chronic articular osteitis, commonly known as hip-joint disease, coxalgia, tubercular disease, etc. The author employs the term first mentioned because it best represents the pathology and conveys a distinct meaning. The lesion is a chronic inflammation of the bones entering into the formation of the hip joint, the vast majority of the cases occurring in childhood. The author thinks that the initial lesion is an osteitis interna; that the head and neck of the femur are more often involved than the acetabulum; that it is rare for a single center of ossification to be involved; that the osteitis is a rarefying osteitis, and may terminate in caries atonica or caries sicca, the former being the more frequent; and that the synovitis is secondary, being simple if developed by contiguity, and purulent if due to perforation. The ætiology of the disease is considered in Chapter XII. The author is satisfied that in all cases there is a predisposing cause, the tubercular or strumous diathesis; that these chronic joint diseases can not occur in a non-strumous child; that the diathesis may be hereditary or acquired; that falls and other injuries are not a cause of the disease, except in the subjects of the diathesis; and that in many cases there is absolutely no exciting cause.

Chapter XIII takes up the clinical history and the complications of chronic articular osteitis. Dr. Gibney adopts the common division of the disease into three stages. The symptoms of the first stage are lameness, slight deformity, reflex phenomena, atrophy of the limb, and pain. There may be slight lameness, occasional pain, a trifling amount of deformity, and resistance to passive motion beyond a certain point; or there may be scarcely a symptom present except the limp. On the other hand, the suffering may be severe, and acute symptoms may be developed suddenly on trivial provocation, with extreme lameness and signs of distension of the synovial sac. This state of things may pass off in the course of a few days, under the influence of rest, and the parts may almost resume their normal condition. The evolution of the disease may be, and often is, slow, the first stage extending over a long period before the second one is ushered in. Pathologically, the first stage corresponds with the disease of the bone, the joint itself not being involved. The second stage corresponds pathologically with perforation, either into the capsular ligament or into the circumarticular tissues, and is marked by increasing deformity. Gradually or rapidly it passes into the third stage, and then there is real shortening, the deformity is mainly due to changes in the shape of the bones, abscesses may form, and dislocation may occur. Chapter XIV deals with the diagnosis of hip disease, and great stress is laid on the desirability of an early diagnosis and of greater precision in methods of examination. This is one of the best chapters in the book.

Chapters XV, XVI, and XVII are devoted to the treatment of the disease. From the peculiarity of the author's experience, as explained in our quotation from the preface, he is personally most conversant with the expectant treatment—this, therefore, is the most unsatisfactory portion of the book. He advises non-interference with abscesses; they may open of themselves and burrow where they will. In regard to operative measures, the author seems to advocate excision in extreme cases. For the deformity, after a cure, Volkmann's cuneiform osteotomy between the trochanters is advised.

We have devoted considerable space to an enumeration of the general contents of the book in order to give some idea of its scope. An immense amount of labor has been expended in its production, and, as regards pathology and clinical history, it is certainly the best work on the subject we have ever seen. Indeed, it is extremely valuable. The chapters on chronic articular osteitis are particularly worthy of praise, being quite up to the teachings of practical surgeons of the present day. In regard to some points exception will no doubt be taken; for instance, as to the management of abscesses, which in this locality should be treated as they would be if situated in connection with any other articulation. Although their course is very little under control, we can limit their extension and counteract the tendency to burrowing by opening them, and that is no small gain. The let-alone treatment seems to us to be a development of conservatism that is not to be recommended. In regard to osteotomy for the correction of deformities left by the disease, we think that a division of the femur below the trochanter minor is a better operation than Volkmann's, because it frees the psoas and iliacus, and thus allows of the limb being placed in a better position.

Dr. Gibney is to be congratulated on the very satisfactory manner in which he has accomplished his task. We wish that we could say as much for the publishers, but we are forced to declare that we have seldom met with such cheap-looking and unsatisfactory illustrations in a medical book as are to be found in this volume. We are sorry that so good a treatise appears in so shabby a garb.

The Evolution of Morbid Germs: a Contribution to Transcendental Pathology. By KENNETH W. MILLICAN, B. A. Cantab., M. R. C. S., Fellow of the Medical Society of London. London: H. K. Lewis, 1883. Pp. 107.

If the value of a book is to be measured by its size, Dr. Millican's little brochure will appear insignificant enough; but, if we judge it by the suggestiveness of its matter and the importance of the new lines of thought which it opens up, our estimate of its worth will doubtless be considerably enhanced. If we add that the author's treatment of the matter and methods of reasoning are cautious and judicial rather than partisan in their tone, we shall have said enough to recommend the work to the notice of all who are interested in its subject.

The contents of the book may be summarized in two propositions: first, that by a process of development, induced mainly by alterations in conditions of environment, a germ, which usually produces by its activity the symptoms of one specific disease, may be so altered as to produce those of another distinct disease; in other words, that the bacterium of scarlet fever may be converted in a different disease into the bacterium of scarlet fever. The second proposition is that, by a similar process of development, an entirely innocent organism may be converted into one of specifically noxious properties—i. e., that a scarlet-fever bacterium may be generated from a simple microscopic germ, which ordinarily is devoid of pathological significance. The evidence for these propositions is

partly *a priori*, partly the result of clinical experience, and, in presenting it, the author adduces a number of curious instances pointing to the heterogeneity and absence of specific character in the so-called essential diseases. Of course, it is the amassing of evidence of this sort that the theories here advanced are to be ultimately tested; and it is greatly to be wished that extended investigation could be carried on in this field of such fruitful promise. In the mean time, it must be confessed that our knowledge of what may be called the natural history of epidemic and contagious diseases is sadly defective and in need of revision.

One argument stated by Dr. Millican is particularly suggestive. It is addressed to those who deny that the Darwinian theory of gradual development can be applicable to such rapid changes in the life history of the bacteria as are necessitated by his hypothesis. To this he answers that these evolutionary processes do not so much require causes working over long periods of time as causes working upon many successive generations; and, inasmuch as a thousand generations of bacteria may rise and fall in the course of a few days, slight changes of environment affecting every one of these generations successively are competent to cause great changes at the end of say a week's time.

Another pregnant result embraced in the author's hypothesis is that it does away with what he not inaptly calls the bugbear of the germ theory—the question of *de novo* origin. The latter, viewed in the light of his propositions, is only “evolution of function.”

Of course, when all is said, the hypothesis, so fascinating in its completeness and so satisfactory in the readiness with which it solves knotty points formerly insoluble, is an hypothesis still, and needs the corroboration of carefully ascertained facts. The book is useful, at all events, if only in pointing out the way which we must follow, if these facts are to be compiled.

BOOKS AND PAMPHLETS RECEIVED.

Syphilis and Pseudo-syphilis. By Alfred Cooper, F. R. C. S. Eng., Vice-President of the Medical Society of London, etc. London: J. & A. Churchill, 1884. Pp. xvi-339. [From P. Blakiston, Son & Co., Philadelphia. [Price, \$3.50.]

On Visceral Neuroses; being the Gulstonian Lectures on Neuralgia of the Stomach and Allied Disorders. Delivered at the Royal College of Physicians, in March, 1884, by T. Clifford Allbutt, M. A., M. D. Cantab., F. R. S., etc. Philadelphia: P. Blakiston, Son & Co., 1884. Pp. viii-103. [Price, \$1.50.]

Notes on the Opium Habit. By Asa P. Meylert, M. D., Member of the Medical Society of the County of New York, etc. Second Edition. New York: G. P. Putnam's Sons, 1884. Pp. 37. [Price, 40 cents.]

Cauterets, ses eaux minérales et leurs effets curatifs. Par le Dr. Duhoureau, pharmacien de première classe, etc. Paris: Ve. A. Delahaye & Lecrosnier, 1882. Pp. 109.

Quarterly Report of Medical Officers, United States Army, with their Stations and Duties, as reported to the Surgeon-General July 1, 1884, or at date of last report received at this office.

Fermentation in the Human Mouth; its Relation to Caries of the Teeth. The Influence of Antiseptics, Filling Materials, etc., upon the Fungi of Dental Caries. The Fungi of Dental Caries; their Pure Cultivation and Effect upon Lower Animals. By Dr. W. D. Miller, Berlin, Germany. [Reprint from the “Independent Practitioner.”] [Price, 50 cents.]

Association of the Alumni of the Albany Medical College, Medical Department of Union University. Proceedings of the Eleventh Annual Meeting.

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PREPARATIONS FOR THE CHOLERA.

IN view of the probability of a visitation of cholera, the State Board of Health of New York has issued a special circular in which, while it takes the very sensible ground that quarantine measures should not alone be depended upon, it does not, on the other hand, sneer at them and vilify them, as has come to be too much the habit with sanitary boards in this country. Indeed, the circular distinctly alludes to the fact that, although the disease was brought to the New York quarantine station in the autumn of 1865, it was not until the following spring that it gained a foothold in the city. The whole tone of the circular is in keeping with the view that quarantine is one of our defenses against cholera, but that it is only an outpost, so to speak, and that the inner lines, where the hand-to-hand conflict is to be waged, are in every way to be strengthened by cleanliness, especially in the matter of drinking-water.

The circular points out that the European sources of cholera are now at least equal to what they were in 1865, and that the means by which the disease is likely to be conveyed across the Atlantic are decidedly greater than they were then. One need not be an alarmist to recognize the truth and the bearing of these statements, however at variance they may be with the jaunty suggestions of certain officials of the steamship lines to the effect that the "cholera scare exists only in the newspapers." It is true that the cholera may not reach the American coast this summer, and that, if it does, it may be stopped at the quarantine stations; but the probability seems to be that neither of these possibilities will intervene to shield us from an outbreak of the disease. The board, therefore, wisely calls upon every city, town, and village to make preparations to resist and limit the spread of any outbreak: to make careful sanitary inspections; to drain all stagnant pools and low grounds near dwellings; to clean all sewers and house-drains; to cleanse and disinfect cellars, privies, and all filthy places; and to examine and protect the purity of drinking-water.

This advice, of course, is such as the careful and the intelligent will at once admit to be wise, and will proceed to follow to the extent of their ability; but the question at once arises as to what can be done to compel some heed being paid to it by those who are not disposed to do so voluntarily, but upon whose course not only their own safety but that of their fellow-citizens largely depends. To show how far it is empowered to control local sanitary bodies, the board has obtained an opinion from the Attorney-General, and has issued it in the form of a supplementary circular. The gist of the opinion is that the State Board of Health is supreme over local boards, and that, in case the latter prove inactive in suppressing nuisances dangerous

to the public health, in the opinion of the State board, it may compel them to take measures for their suppression, employing mandamus proceedings, if necessary, as prescribed in section 2,067 of the Code of Civil Procedure. It seems, however, that, before such proceedings are resorted to, it will be necessary for the State Board of Health to notify the town board, through the Supervisor, that, in the judgment of the State board, the nuisance exists in the town, and that the town board is required to take proceedings for its removal or abatement. Some months ago the State board found itself in a position where it thought it could do no more than "request" a powerful railway corporation to provide means of draining a stagnant pool caused by the obstruction due to one of its viaducts. It is to be hoped that the board will now feel its hands so strengthened that it may deal summarily with offenders.

CHOLERA AND QUARANTINE.

THE national limitation of diverse views as to the advisability of attempting to stay the march of cholera by quarantine is somewhat puzzling. When we consider that the English, almost without exception, whether sanitarians, Government officials, or others, look upon the plan of fighting cholera by means of quarantine restrictions as absurd, if not cruel, while, on the other hand, with equal unanimity the same classes in every other country of Europe not only regard the English opinion as untenable, but in many instances go so far as to countenance measures on the part of their respective governments calculated by their severity to make up for the English laxity—when we consider these facts, the obvious inference is that the English, alone of all civilized nations, either have hit upon a truth which others must have been blind indeed not to see, or, however involuntarily and insensibly, have subordinated their reasoning powers to their commercial pride. It is not unlikely that the course of the disease in Europe this summer may demonstrate which of the two suggestions is correct, and it will be fortunate for us if experience gained in America does not contribute to the solution of the question.

That a quarantine against cholera is apt not to be so effective as is desired, and perhaps not so efficient as against some other pestilential diseases, may be admitted without our conceding the soundness of the English position. A measure may be relatively very inefficient, and yet contribute somewhat to the desired result. On that principle, we must deprecate the disposition manifested in some quarters to discredit quarantine in advance by the cry that it never yet stopped cholera. Cholera is a disease that pre-eminently follows the course of commerce, and, if any given outbreak is to end otherwise than by the natural dissipation of its forces, it seems reasonable to suppose that it must be checked by some device which limits the part played by commerce in its transportation. But, however we may look at the main question, there can be no doubt that the English doctrine has this one good effect, that it tends to bring the importance of civic sanitation prominently forward in the public mind.

But it is not at all certain that our English friends are so

confirmed in their distrust of quarantine measures as to omit their enforcement altogether. We learn from an editorial article in a recent issue of the "Medical Times and Gazette" that, under the revised cholera regulations, an officer of the customs may detain any vessel on its arrival in English waters if he has reason to suspect that it is infected with cholera; and, having done this, he must give notice of the detention of the vessel to the sanitary authorities, who must cause their Medical Officer of Health, or some other medical man, to visit and examine the vessel. Or a Medical Officer of Health may visit and examine any vessel that he may suspect of being infected with cholera, or of having come from some infected port. When a medical officer has certified that a ship is infected, no one can leave it without the medical officer's permit; and, should any person be found to have cholera, he must be sent into hospital. In doubtful cases, the patients may be detained on board the ship or in hospital until the nature of their illness has been clearly made out; and provision is made for the disinfection of the vessel and of all infected clothing, bedding, etc. Sanitary authorities have been appointed at the English ports, and it is stated to be the duty of their sanitary officers to deal, in accordance with the prescribed regulations, with all infected ships and all cases of infectious disease coming into port. "These regulations," the "Times and Gazette" adds, "which are the outcome of our present knowledge and experience of the modes by which the spread of cholera can most certainly be prevented, are now in force, and will remain in force not for any definite period only, but until they are repealed."

NEWS ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending July 15, 1884:

DISEASES.	Week ending July 8.		Week ending July 15.	
	Cases.	Deaths.	Cases.	Deaths.
Typhus.....	1	0	3	0
Typhoid Fever.....	9	3	7	3
Scarlet Fever.....	42	13	45	7
Cerebro-spinal meningitis....	4	4	2	1
Measles.....	171	32	181	26
Diphtheria.....	34	18	29	13

The Cholera in Europe.—During the week the outbreak in France had shown no abatement, but rather an increase, especially in Marseilles, where it has produced the utmost consternation, more than fifty thousand of the inhabitants being estimated to have fled. As we go to press, it is reported that a few cases have occurred in Paris, but there is as yet no authentic news of anything like an epidemic prevalence in that city. The rumored appearance of the disease at Lyons is denied. On the 14th it was reported that two cases had occurred in the Russian town of Poltava. Dr. Koch is said to have expressed the opinion that the cholera was introduced into France by some English vessel which failed to report cases that it had on board. Still more stringent measures of protection are being undertaken by the various European governments, and the people of Great Britain seem to be losing their sense of security.

In our own country also commendable activity is being dis-

played. Our consuls at London, Liverpool, Marseilles, Havre, Bordeaux, Bremen, and Hamburg have been instructed by the State Department to appoint competent medical officers at once to inspect all vessels and passengers leaving those ports for this country; they are instructed to refuse clean bills of health in all cases in which the medical officer recommends that course; and notice has been given by our consul at London that vessels without a clean bill of health can not be admitted into American ports. The Surgeon-General of the Marine-Hospital Service states also that customs officers along the coast have been instructed not to admit passengers' baggage unless it can be shown that it did not leave any of the infected ports after June 20th. Provision is being made, too, for the disinfection of suspicious cargoes of rags, and for the prevention of the entrance of vessels laden with cargoes of that sort, as well as of the indirect importation of infected rags through Canada and other foreign countries. The quarantine officers in Louisiana have been ordered by the State Board of Health to detain all vessels arriving from any ports where cholera exists. On Tuesday a steamship reached Sandy Hook, having left Marseilles on the 28th of June. She was detained, very properly, although she had left Marseilles before there had been any cholera there. The President of the National Plumbers' Association has addressed a communication to the members of the association, suggesting that they should act as an auxiliary sanitary corps, under the direction of local boards of health.

The Transmission of Cholera by Railway Travel.—The Lyons *Société nationale de médecine*, as we learn from the "Gazette hebdomadaire de médecine et de chirurgie," has recommended the enforcement of the following rules for preventing the transmission of cholera by railway travel in France: 1. The Mediterranean system shall at once be divided into two sections: that of the contaminated districts, and that of the non-contaminated districts. The point of division between them shall be that express station which, being situated in the non-infected district, is nearest the boundary. 2. Each of these systems shall have special cars, which shall not pass the point of division under any circumstances. The point of division shall be the place of transfer of all passengers leaving or entering the infected zone. 3. Passengers coming from the infected district shall be conveyed in cars reserved exclusively for them. These cars shall be placed at the rear of the train. The cars at the head of the train shall be reserved exclusively for way-passengers. Passengers of the two classes shall be strictly prevented from entering the cars which are not intended for them. 4. When the terminus is reached, the cars that have transported passengers from the infected district shall immediately be disinfected. 5. Baggage from the infected district shall be disinfected *en route* by fumigation with sulphur burned in stationary pans in the baggage-cars. 6. Baggage-cars which are not transferred shall, in addition to the continuous sulphur fumigation on the way, be disinfected outside, at the point of division, with a solution of sublimed chloride of zinc or some other powerful disinfectant. 7. Hand baggage shall likewise be disinfected, at the point of division, by exposure to the fumes of sulphur for at least twenty minutes. 8. The baggage of a passenger attacked with cholera, or who has died of the disease *in transitu*, shall, on the arrival of the train, be subjected to a special and more thorough disinfection.

A Concealed Case of Small-pox was the subject of search on the part of the medical officers of the Board of Health on Tuesday and Wednesday. The patient had escaped from Greenpoint, and been taken across the East River in a coach, but he could not be found in the house at which the driver of the coach stated that he had left him. It is suspected that the

man's relatives are secreting him, and, if this should turn out to be the case, the board will prosecute the offenders under the Penal Code.

Yellow Fever in Mexico.—Advices from the City of Mexico, by way of Galveston, state that on the 15th inst. the fever was raging at Guaymas, and that there had been several cases at Mazatlan. It was added that as yet the disease had not appeared on the Gulf Coast this year.

"Rough on Rats" has caused the death of another person, this time by suicide, the victim being a German shoemaker living in Newark, N. J.

A Nuisance Abated.—The State Board of Health is to be congratulated on having succeeded in causing the abatement of at least one nuisance, in the shape of a cream of tartar factory at Stapleton, Staten Island.

Alleged Ill-Treatment in a Lunatic Asylum.—A story is told by a citizen of Syracuse, lately discharged from the State Lunatic Asylum at Utica, of brutalities practiced upon himself and other inmates of the institution of so revolting a character that we prefer to believe them in great measure founded only in his imagination. The story is said to be generally credited in Syracuse, however, and the moral of the occurrence seems to be that the administration of our asylums should be so manifestly above reproach as to make the popular belief in such tales impossible.

The Niagara University.—The "Buffalo Medical and Surgical Journal" learns that a very advantageous piece of property has been acquired for a new building for the medical department, near the Grosvenor Library.

The Honorary Degree of LL. D., we are informed, was conferred on Dr. N. C. Husted, of this city, by Syracuse University at its recent annual commencement.

The Medical Society of the County of Richmond.—At the annual meeting, held July 2d, the following-named gentlemen were elected officers for the ensuing year: Dr. R. Henry Golder, president; Dr. T. J. Thompson, vice-president; Dr. E. D. Connelley, secretary and treasurer; Dr. Ambrose, Dr. Beyer, and Dr. Wood, censors; and Dr. F. E. Martindale, delegate to the State society.

Recent Paris Thesis.—The "Progrès médical" gives the following dates and titles of recent *thèses de Paris*: May 21st: A Contribution to the Study of the Nervous Phenomena of Typhoid Fever, by M. Riberolles; On Lymphangitis in Diseases of the Skin, by M. Pavrel. May 23d: Puerperal Eclampsia, by M. Chambert; The Bichloride and the Biniodide of Mercury in Obstetrics, by M. Bastaki. May 24th: Corrosive Sublimate in Obstetrics, by M. Beuve; Remissions in Locomotor Ataxia, by M. Bordéremy; A Study of Four Cases of Fatty Hypertrophic Cirrhosis, by M. Rosenblith; A Contribution to the Study of the Treatment of Tinea Tonsurans, by M. Thomas; Hæmatoma of the External Auditory Meatus, by M. Tétard; Alcoholism and Cirrhosis, by M. Jaladon. May 29th: A Contribution to the Study of a Rare Complication of Hydatids of the Liver, by M. Faillé; The Treatment of Nephritis with Digitalis, by M. Jaulin; A Contribution to the Study of Intestinal Obstruction without Mechanical Obstacle, by M. Thibierge; On Blennorrhœa treated with the Sulphurous Waters of Bagnères-de-Luchon, by M. Doit; A Contribution to the History of Malingering in the Military Service, by M. Gentilhomme. May 30th: The Study of Ophthalmoscopy in Meningitis, by M. Bouchut; The Connection between Vaccinia and certain Diseases of the Skin, and their Reciprocal Influence, by M. Moulinet; On Prolonged Applications of Antiseptic Spray in the Treatment of certain

Surgical Affections, by M. Charles; A Contribution to the Study of Gummy Periostitis of the Scapula, by M. Folliot. May 31st: The Typhus or Plague of Athens, by M. Lallot; A Study of the Clinical Forms of Renal Cancer, by M. Patino Luna. June 5th: A Contribution to the Study of Persistent Asthma, by M. Sagrandi; Hydrorrhœa, and its Import as a Symptom of Cancer of the Uterus, by Mlle. Coutzaride. June 6th: A Contribution to the Study of Hepatic Syphilis, by M. Bourred; On Epithelioma of the Floor of the Mouth, by M. Faure. June 12th: A Study of Fatty Cirrhosis, by M. Bellangé; Hæmatoma of the External Auditory Meatus, by M. Tétard; The Ætiology of Scurvy in Prisons, by M. Mercier. June 13th: On the Form of the Pelvic Excavation considered from an Obstetrical Point of View, by M. Boissard. June 13th: A Study of some Cases of Uterine Malformation, with special reference to Pregnancy and Labor, by M. Humbert; A New Method of Chloroformization by Means of Titrated Solutions, by M. Lambert; Artificial Alimentation, by M. Houel; A Study of Pulmonary Congestion as a Complication of Injuries of the Brain, by M. Sourice. June 17th: Artificial Alimentation, by M. Humbert; Pulmonary Congestion Complicating Cerebral Injuries, by M. Houel; A Study of a Case of Sudden Death by Pulmonary Embolism, by M. Motel. June 18th: The Channels of Access of Tuberculosis, by M. Verchère; Hæmophilia, by M. Hernandez; Corrosive Sublimate in Obstetrics, and especially in Fœtal Putrefaction, by M. Bonnet. June 19th: The Results of the Application of Rousset's Law to the Calvados, by M. Vallette; The Œdèmes of the Arthritic Diathesis, by M. Testelin. June 20th: The Clinical Forms of Intermittent Fever in Children, by M. Benoit; Blennorrhagic Follicular Inflammation in Women and its Treatment, by M. Bouchet; The Conditions of Surgical Interference in External Localized Tuberculosis, by M. Condray; The Solution of Stone in the Bladder, by M. Portafax. June 26th: On Ulceration of Arteries due to Contact with Pus, by M. Flous; Experimental Researches on the Discovery of Tuberculosis in Bones, by M. Castrosoffi. June 27th: On Muscular Shocks, by M. Colaneri; Osteo-periostitis following Typhoid Fever, by M. Turgis; Syphilis and Prostitutes, particularly with regard to the Pigmentary Syphilide, by M. Maireau; Affections of the Buccal Mucous Membrane in their relations with the State of the Teeth, by M. Trichet. June 30th: Lacerations of the Cervix Uteri, by M. Jaquetot; The Therapeutical, Chemical, and Physiological Properties of the *Hamamelis virginica*, by M. Guy. July 2d: The Best Mode of Treating Purulent Pleurisy, by M. Guinard; The Local Treatment of Psoriasis with Chrysophanic Acid, by M. Dérobert. July 3d: Ptosis, and particularly its Treatment by the Method of Supplementing the Levator Muscle of the Upper Lid by the Frontal, by M. Beauvois; The Treatment of Goitre with Iodoform, by M. Thiroux. July 4th: Carcinoma of the Peritoneum, by M. Mongrid; Congenital Serous Cysts of the Neck, by M. Bacna. July 5th: Ocular Rheumatism and some of its Manifestations not usually known, by M. Barneua; The Relations of Peritonitis to Atrophic, Hypertrophic, and Fatty Cirrhosis, by M. Husson.

The Late M. Dumas.—We learn from the "Progrès médical" that a public subscription has been started in France for the purpose of erecting a monument to the memory of M. Dumas, and that the Paris Faculty of Medicine will take part in the movement.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from July 6, 1884, to July 12, 1884:*

Promotions to date from July 2, 1884.

PERIN, GLOVER, to be Assistant Surgeon-General, with rank of Colonel.

SMITH, ANDREW K., to be Surgeon, with rank of Lieutenant-Colonel.

MIDDLETON, PASSMORE, to be Surgeon, with rank of Major.

CLEMENTS, B. A., Major and Surgeon. Also directed to relieve Surgeon J. P. Wright of his duties as Acting Medical Director Department of the Missouri. Par. 1, S. O. 188, Headquarters Department of the Missouri, July 8, 1884.

Promotions.

To be Assistant Surgeons with the rank of Captain, after five years' service, in accordance with the act of Congress of June 28, 1874:

KANE, JOHN J., Assistant Surgeon, June 3, 1884.

BANISTER, JOHN M., Assistant Surgeon, June 3, 1884.

APPEL, AARON H., Assistant Surgeon, June 3, 1884.

RICHARD, CHARLES, Assistant Surgeon, June 3, 1884.

CARTER, W. FITZHUGH, Assistant Surgeon, June 3, 1884.

BIRMINGHAM, H. P., First Lieutenant and Assistant Surgeon. From Fort Bayard, N. M., to Fort Bliss, Texas. Par. 3, S. O. 187, Headquarters Department of the Missouri, July 3, 1884.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the Navy during the week ending July 12, 1884:*

LUMSDEN, G. P., Passed Assistant Surgeon. Ordered to U. S. S. Wyandotte.

PERBONS, R. C., Passed Assistant Surgeon. Detached from U. S. S. Wyandotte, and placed on waiting orders.

Marine-Hospital Service.—*Official List of Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service—April 1, 1884, to June 30, 1884:*

BAILHAQUE, P. H., Surgeon. Detailed as chairman of board to examine candidate for appointment into the Revenue Marine Service, May 17, 1884.

VANSANT, JOHN, Surgeon. To proceed to Empire City, Oregon, as inspector, April 2, 1884.

HUTTON, W. H. H., Surgeon. Granted leave of absence for twenty-five days, May 14 and June 9, 1884.

MILLER, T. W., Surgeon. Granted leave of absence to attend the meeting of the American Medical Association, May 1, 1884. To proceed to Pittsburgh, Pa., Ashtabula, Ohio, Buffalo, N. Y., and Detroit, Mich., as inspector, May 10, 1884.

WYMAN, WALTER, Surgeon. To proceed to Crisfield, Md., as inspector, April 11, 1884. Detailed to represent the Marine-Hospital Service as delegate to the American Medical Association, April 17, 1884. Detailed as president of board for physical examination of candidates for appointment as cadets in the Revenue Marine Service, May 20, 1884. To examine cadet-graduates Revenue Marine Service as to physical qualifications, May 31, 1884. Detailed as member of commission to inspect United States buildings at quarantine station on the Delaware River, June 16, 1884.

AUSTIN, H. W., Surgeon. Granted leave of absence to attend the meeting of the American Medical Association, May 2, 1884.

GASSAWAY, J. M., Surgeon. When relieved by Passed Assistant Surgeon Mead, to proceed to Portland, Me., and assume charge of the Service, April 16, 1884. Granted leave of absence for thirty days, May 28, 1884.

STONER, G. W., Passed Assistant Surgeon. When relieved by Surgeon Gassaway, to proceed to Cairo, Ill., and assume charge of the Service, April 16, 1884. When relieved by Surgeon Gassaway, to report in person to the Surgeon-General, June 20, 1884.

IRWIN, FAIRFAX, Passed Assistant Surgeon. Granted leave of absence for twenty-one days, June 19, 1884.

MEAD, F. W., Passed Assistant Surgeon. When relieved by Assistant Surgeon Devan, to proceed to Philadelphia, Pa., and assume charge of the Service, April 16, 1884. Detailed as recorder of board for physical examination of candidates for appointment as cadets in the Revenue Marine Service, May 20, 1884.

CARTER, H. R., Passed Assistant Surgeon. To inspect unseviceable property at the San Francisco Hospital, May 24, 1884.

WHEELER, W. A., Passed Assistant Surgeon. To inspect unseviceable property at the Chicago Hospital, May 24, 1884.

BENSON, J. A., Passed Assistant Surgeon. Granted leave of absence for thirty days, April 14, 1884. When relieved by Passed Assistant Surgeon Stoner to report to him for temporary duty, May 19, 1884.

BANKS, C. E., Passed Assistant Surgeon. Detailed as member of board to examine physically candidate for appointment into the Revenue Marine Service, May 17, 1884. To inspect unseviceable property at Baltimore, Md., New York, N. Y., and Boston, Mass., May 26 and June 2, 1884.

BENNETT, P. H., Assistant Surgeon. Granted leave of absence for twenty days, June 28, 1884.

DEVAN, S. C., Assistant Surgeon. To proceed to Port Townsend, W. T., relieve Passed Assistant Surgeon Mead, and assume charge of the Service, April 14, 1884.

URQUHART, F. M., Assistant Surgeon. Granted leave of absence for thirty days, May 22, 1884.

YEMANS, H. W., Assistant Surgeon. To report to Captain M. A. Healey for duty as medical officer during cruise of Revenue Cutter Corwin, April 16, 1884.

GLENNAN, A. H., Assistant Surgeon. To proceed to Mobile, Ala., for temporary duty during sickness of Passed Assistant Surgeon Goldsborough, June 17, 1884.

Appointment.

BROOKS, STEPHEN D., M. D., of Massachusetts, having passed the examination required by the regulations, was appointed an Assistant Surgeon by the Secretary of the Treasury, May 15, 1884. (Dr. Brooks had previously served as an Acting Assistant Surgeon from March, 1883, to May, 1884.)

Society Meetings for the Coming Week:

TUESDAY, July 22d: Medical Society of the County of Putnam, N. Y. (annual).

Proceedings of Societies.

NEW YORK CLINICAL SOCIETY.

Meeting of March 28, 1884.

Dr. J. WILLISTON WRIGHT, Chairman for the evening.

Diffuse Suppuration of the Pelvis and Thigh.—Dr. L. BOLTON BANGS remarked, concerning the case that he had reported at the last meeting [see p. 26], that the improvement had been only temporary, that there was now hectic fever again, and that the patient was losing ground. The speaker's term of service at the hospital had expired, and consequently the patient was not now under his observation.

Chronic Abscess of the Neck connected with the Tonsil.

—Dr. ROBERT ABBE mentioned the case of a man who had been sent to him to be operated on for a tumor of the neck of three

years' standing. Apparently he had a glandular tumor, but, on closer examination, it was found to consist of a tense sac, and some very thick pus was withdrawn from it by means of an exploring-needle. An incision was made, and the sac was evacuated. It was then found that a sinus extended upward behind the jaw, into which a probe could be passed for several inches, without touching any dead bone. The sinus did not heal, and after a time a small calcareous mass, about as large as a pea, was discharged. Further probing showed that the sinus led up to the outer side of the tonsil, where the probe could be felt just beneath the mucous membrane. Subsequently five or six more of these small calcareous masses were discharged, and the sinus had now healed. The case seemed to be one of old inflammation of the tonsil with calcareous degeneration; the opening on the mucous surface having closed, burrowing of pus to the side, of the neck had followed.

The CHAIRMAN reported a case almost precisely the same which had come under his observation about ten years before. The patient was an elderly lady, and the swelling was supposed to be glandular. Incision and scraping were not followed by a cure, and there was a sinus that took precisely the same course as in Dr. Abbe's case. Calcareous masses were discharged, and the tract healed in about a year.

Dr. WALTER MENDELSON asked if any chemical examination had been made of the calculi, with a view of determining whether they were of gouty origin or not.

Dr. ABBE said they had not yet been examined.

Dr. E. G. JANEWAY remarked that these concretions usually consisted of carbonate and phosphate of lime, like those in the lungs, unless the patient was gouty.

Fracture of the Patella.—Dr. J. H. EMERSON related a case of fracture of the patella which he had treated the preceding summer, using adhesive straps and plaster of Paris. At the end of four months the treatment was discontinued, there being then no appreciable separation of the fragments. Four months afterward he was called to see the lady again, as she had met with a fracture of the other patella, and he then found the fragments of the bone first fractured separated two inches, but bound together by a strong ligament.

Dr. ABBE thought that such stretching of the ligamentous band happened not uncommonly, even in so short a time. It did not seem advisable, however, to keep the limb quiet for a longer time. The length of the ligament was not a criterion of the utility of the limb. He remembered a patient once shown by Dr. Frank Hamilton, in whom there was a separation of fully four inches when the knee was bent; yet the functions of the limb were perfect, so far as could be seen. The patient could walk up and down stairs with the greatest facility.

The CHAIRMAN remarked that, when one patella was broken, the other one was apt to be broken also sooner or later. In any misstep the patient always threw a great strain upon the sound limb, being so accustomed to favor the other one.

Retention of a Laminaria Tent in the Uterus.—Dr. EMERSON related the case of a young married woman who had come to his clinic complaining of repeated uterine hemorrhages. A history of pregnancy and of early abortion was elicited, and it was determined to dilate the cervix and explore the uterine cavity. The cervix was firm, and the uterus was slightly ante-flexed. Some difficulty was met with in passing the uterine sound. A laminaria tent two inches and a half long was introduced. On attempting to remove this, twenty-four hours later, the silk thread was pulled off, but the tent did not come away. Various attempts at dilatation and removal with forceps, etc., were unsuccessful. The cervix was then slit up half an inch on each side, but without success. A tampon was applied, and a dose of ergot was given. On the following day

the patient was anesthetized, and attempts were again made to extract the tent with forceps of a number of kinds, but to no purpose. The cervix was then divided freely, through the os internum, and just at that time the patient vomited, with the result of starting the tent, so that it was easily removed with a tenaculum. The retention of the tent had been due to the ante-flexion, which it had partially corrected. The patient was now doing well, and had had no bad symptom. The incised cervix had not yet been brought together.

Low Temperature in Pneumonia.—Dr. JANEWAY called attention to the significance of low temperatures in pneumonia. He had recently seen three cases, two of which proved fatal, and the third, which was still under observation, would probably result in the same way. The first case was that of a woman, fifty-five years of age, whom he had seen on the sixth day of the disease, hæmoptysis having given rise to the suspicion of phthisis. He found well-marked consolidation at the base of one lung, and some signs on the other side. The rectal temperature was only 100° F. The patient died on the ninth day. In the second case he saw the patient on the fourth day, and there had been no marked elevation of temperature. Here, also, the physical signs were plain. In the third case the highest temperature noted thus far had been 102°. Such cases used to be called asthenic pneumonia. For several days before taking to bed, the patients were often sick without any marked rational symptoms, or the symptoms might be misleading, like the hæmoptysis in one of the cases he had referred to; and yet they might die a day or two later. He thought this low temperature a bad symptom, although he had seen it followed by recovery. In the cases referred to, the pulse had been rapid—in the first one, from 150 to 160; in the second, from 120 to 130. He also called attention to the fact that apex pneumonias were often overlooked because the physician examined only in front, and the signs were not usually to be found there, but high in the axilla and behind. The percussion-note in front was often vesiculo-tympanic from imprisoned air. Many such cases were diagnosed as remittent fever.

Dr. J. E. WINTERS had seen acute pneumonia, complicated with pericarditis, in an old lady whose temperature did not go above 98.5° and much of the time remained at 97.5°. The patient recovered. Recovery took place in another case also, that of a lady of seventy, whose highest temperature was 99.75°. The pneumonia was at the apex. In a third case, in a patient of sixty-eight, the whole right lung was involved, there was delirium for ten days, but the highest temperature reached was 101.5°. In that case also recovery took place. From this experience, he was not inclined to look upon low temperature as so unfavorable a symptom as Dr. Janeway had indicated, but he agreed with him as to the obscurity often attending apex pneumonias. He had seen a child who had had three convulsions within an hour, and yet the temperature was not high, and the pneumonia was not extensive.

The CHAIRMAN had seen a child one afternoon which had been taken with convulsions in the morning. The temperature was 104°. Pneumonia was suspected, but no physical signs were found. The convulsions were repeated the following day, and in a few days the physical signs proved the correctness of the suspicion.

Dr. G. A. SPALDING mentioned the case of a baby six months old, with pneumonia, in which the temperature dropped within six or eight hours from 104° to 95° in the rectum the extremities becoming cold, as well as the nose and the ears. It was twenty-four hours before the temperature reached 97°. The case ended in recovery.

Dr. JANEWAY thought this was most probably a case of collapse from heart-failure.

Slowness of the Pulse in Acute Diseases.—Dr. GASPAR GRISWOLD mentioned two cases in which a very slow pulse had been noted, and asked the opinion of those present as to its significance. The first case was one of typhoid fever. The temperature ranged from 105° to 105.5° , but the pulse never rose above 100. For several days before death it was only 80. In the second case, one of intestinal obstruction, the pulse was only 54 for the greater part of the time, and several times dropped nearly to 40.

Dr. JANEWAY also had observed this state of the pulse in typhoid fever, and mentioned the case of a girl with this disease, complicated with myocarditis, in which the pulse ranged from 40 to 60. The patient ultimately recovered. He thought the slowness of the pulse was to be explained by degenerative changes in the substance of the heart, as in cases of fatty heart.

Constipation and Melancholia.—Dr. BANGS related the case of a gentleman, seventy-four years of age, who, while riding, was suddenly seized with a desire to evacuate his bowels. When he reached home he was unable to pass anything, and from that time for a year he suffered with the most obstinate constipation. Examination revealed a large mass, which nearly filled the rectum, situated about three inches from the anus. It was hard and firm and not sensitive on pressure, and there was no sign of ulceration. There was found to be a small opening through it, which was dilated so as to admit a No. 9 Wales's rectal bougie, and there was now no difficulty about the evacuations, but within the last few weeks the patient had lapsed into a state of great mental depression, had lost flesh rapidly, and was now truly melancholic. Although cancer might be suspected from the family history, no evidence of such a growth could be found on careful examination.

Dr. WINTERS mentioned a case of obstinate constipation with melancholia in a young man of nineteen, in whose case no other cause for the symptoms could be found than the gastro-intestinal disorder. He was treated for many months without any change, but finally the stomach and intestines returned to their normal condition, and with that the melancholia disappeared.

Dr. JANEWAY remarked that patients with melancholia were almost always constipated, and that it was hard to say in such cases which was the cause and which was the effect. In such patients all the functions were performed sluggishly.

Dr. MENDELSON mentioned a case that he had seen in the New York Hospital, in which delusions and obstinate constipation were associated, and in which the patient ultimately became really insane.

An Obscure Case of Dropsy was related by Dr. L. Emmett Holt: A lady, thirty years old, had been under observation for several months, suffering with chronic pelvic cellulitis and peritonitis. She gave a history of having had acute peritonitis several years before. During the interval she had suffered almost continuously with diarrhoea, which had been relieved only temporarily by treatment, but had had no dropsy. One morning she awoke and found her face greatly swollen, and in the course of the day the lower limbs became very oedematous, even above the knees. She could not wear her shoes, and only with the greatest difficulty a pair of loose slippers. The flow of urine was very free. There was a little nausea, with slight headache, but no vomiting. She was conscious of not feeling quite so well as she had felt for a few days before, but of nothing more. The bowels at this time were under control by astringents. She was seen after the dropsy had existed for two days. It was then beginning to subside, and there was none in the face, but it was still very marked in the legs and ankles. That was the first day that she had been able to button her shoes. She was not anæmic, but had a good color in her cheeks. No organic disease of the heart could be found, and she had never had

rheumatism. She was not hysterical, nor even what would be called nervous. At this time she was passing pale and limpid urine, of a specific gravity of 1.004, in which the heat-and-nitric-acid test revealed no albumin, and in which there was no deposit, nor any abnormal constituent to be found on microscopical examination. Two days afterward, another specimen showed a specific gravity of 1.022; it was of an amber color, and acid reaction, but contained no albumin and showed nothing abnormal under the microscope. This was a morning specimen. The dropsy had by this time quite disappeared. Several specimens of the urine were subsequently examined, but the specific gravity was never less than 1.020, and nothing was found in them by chemical or microscopical examination. There had been no return of the dropsy, and it was now two weeks since its first appearance. The case was presented for a diagnosis.

Dr. MENDELSON suggested some vaso-motor disturbance.

The Significance of Glycosuria in Connection with Disease of the Brain and Cervical Cord, and with Dementia Paralytica.—Dr. ALLAN McLANE HAMILTON's paper with this title, read in abstract at the preceding meeting [see page 1], was now brought up for discussion.

Dr. JANEWAY thought the aphasia of nephritis was the result rather of the arterial changes in the brain than of the changes in the kidney. Albuminuria and coma might just as well be owing to cerebral hemorrhage as to uræmia, as he had often had opportunities of demonstrating. Vaso-motor disturbances were very common in cases of Bright's disease, and often of a temporary character. Regarding the presence of sugar in the urine in epileptic coma, or in asphyxia of any kind, he had carefully tested for it in thirty cases. Although it was occasionally seen, it was always in very small quantity, and might be disregarded as a diagnostic sign. He would call attention to persistent occipital headache as an early sign of Bright's disease, and one which should always excite suspicion and lead to an examination of the urine. These patients were often treated for congestion of the brain.

Dr. BANGS asked whether the gynecologists would regard delay of the menses until the twenty-second year as a reason for suspecting kidney disease. He had recently seen such a case, and, in trying to find out some cause, discovered oedema of the right foot. The urine showed granular and hyaline casts. A history of scarlet fever eight years before, followed by dropsy, was obtained. Under the use of iron and the bichloride of mercury, the patient improved rapidly, and at the end of a year the menses appeared.

Dr. JANEWAY related a case which had come under observation on account of persistent headache following an attack of cerebro-spinal meningitis. The patient stated that, since the meningitis, but several years ago, another physician had found sugar in his urine. The sugar had afterward disappeared. A day specimen of the urine revealed a large amount of albumin, but no casts. Night and morning specimens were afterward examined, without even a trace of albumin being found. The urine passed during the day always contained it in large amount. The patient was taught to make the tests for albumin, and kept up a series of observations for a long time. He found that the albumin was always absent from the urine passed immediately on rising. If he took a sponge bath, or even read the paper for an hour, the urine passed afterward always contained albumin in considerable quantities. Any mental or physical effort was enough to make it appear. Casts were never found, and the quantity and specific gravity remained normal. His headaches were much improved by the use of ergot. The appearance of sugar, and subsequently of albumin, under the peculiar circumstances stated, he thought was in consequence of the old menin-

gitis. Dr. Janeway had seen another case in which the quantity and the specific gravity of the urine were normal, and there was no albumin, but after any severe exertion hyaline casts were present in quite large numbers, and sometimes granular casts. The heart was normal. The patient had no other symptoms of renal disease.

Dr. BANGS mentioned the case of a man who was much of the time in a varnish factory. His urine at these times was always albuminous and had the odor of violets. He was under observation for several years, and never had any albumin unless he had been exposed to the turpentine.

L. EMMETT HOLT, M. D., *Secretary*.

NEW YORK OBSTETRICAL SOCIETY.

(Meeting of February 19, 1884, concluded from page 51.)

Rupture of the Uterus; Laparotomy.—Dr. E. L. PARTRIDGE related a case of rupture of the gravid uterus—less on account of any unusual features which it presented than because of the rarity of the accident. The patient was a poor woman, under the care of a midwife who seemed to be an intelligent and honest person. She stated that the patient had been in labor since four o'clock in the morning, and that she had been with her since five o'clock. She had made examinations from time to time, and had distinctly felt the head presenting. The cervix was dilated to perhaps two inches and a half. The patient, while standing, not having had any specially severe labors, suddenly exclaimed that something had given way, and immediately lay down upon the bed. The midwife again made an examination, and could not feel the head, as she had previously. She sent for Dr. W. E. Forest, but, he being out, she sent for another doctor, who remained by the patient two hours without appreciating the condition. This was about 11 A. M. Dr. Forest then came and found rupture of the uterus, and sent for Dr. Partridge, who arrived perhaps an hour later. The pulse was about 120, not excitable, but fairly strong. There had been comparatively little external hemorrhage, but more than one would expect in ordinary labor. Palpation showed that the uterus was pretty well contracted and situated toward the patient's left side. The fetus was evidently on the right side. An extremity could be distinguished through the abdominal wall, and the finger was passed upward through the cervix, through a rent in the uterus, toward the right side of the abdomen, where a foot could be distinguished, the head being in close proximity, but on a higher level. It seemed, therefore, that the head had been presenting, and that when the rupture occurred the head pressed through the rent and left the feet presenting. It was decided to open the abdomen and remove the child, although some of the physicians present favored extraction through the vagina. The operation was performed at 4 P. M. by Dr. Forest. The incision in the abdominal walls extended from the umbilicus down to the symphysis. The bladder was found spread out like an apron, and, when lifted, extended up nearly as high as the navel. A small amount of urine had been withdrawn with the catheter just before the operation. The peritonæum presented an appearance as if there were gangrenous intestine beneath, but, after a moment, the cause of this appearance was recognized to be liquid blood, situated beneath that membrane. The peritonæum was opened, and most of the free blood in its cavity escaped before the child was removed. The child was easily extracted. The placenta was entirely within the abdominal cavity. The child was large, and, of course, was dead. The uterus was well contracted. The rent began on the left side, near the cervix, and extended to the median line, thence upward to within a third of the dis-

tance to the fundus anteriorly. The child lay on the right side. The peritonæum was stripped up from the edge of the rent in the uterus, so that it could be lifted from the wound to the distance of an inch in one place. The peritonæum had yielded in front of the head before it became lacerated, and then laceration took place not exactly in a line with the rent in the uterus. The rent in the uterus was closed with silk, five or six stitches being employed. The abdomen was very readily cleansed of the small amount of blood which was present. No liquor amnii was present. The abdominal wound was then closed. The pulse was now 115, whereas it had been 120. It seemed, therefore, that the immediate result of removal of the child from the abdominal cavity was an improvement in the condition of the pulse. Dr. Partridge did not see the patient after this time, but he was told that she lived for four days, and then died of peritonitis. It was recognized when the abdomen was opened that it would have been utterly impossible to extract the child through the vagina, and Dr. Partridge thought it might be said in a general way that, when rupture of the uterus had existed for some time, one could be pretty sure that the uterus would be found so contracted that the child could not be drawn through the rent. Any way, it would be a question, if the child had escaped completely into the abdominal cavity, whether, under any circumstances, it would be proper to seize it and draw it through the uterine rent, for the procedure would certainly result in making the rent considerably larger. For that reason, then, if for no other, he thought it would be unadvisable to withdraw the child through the vagina. The pelvis was normal in development; the patient had borne children before. There was no apparent reason for the rupture. The uterine tissue seemed to be quite firm, and the stitches held perfectly well. There was no oozing from the uterine wound after it was closed. No autopsy was made.

Dr. Lusk inquired if Dr. Partridge thought there would have been any advantage in removing the entire uterus.

Dr. PARTRIDGE said he had often thought of the propriety of such a procedure, on general principles, but the question had not been raised in this case.

Dr. Lusk said that, inasmuch as the laceration was principally in the lower segment of the uterus, the organ never contracted down upon it well, and he had often wondered if it would not be a safer procedure to take out the entire uterus. In the two cases which he had witnessed, the patients at first were in excellent condition for operation. The uterus was not removed, however, and they finally died after an operation similar to the one which Dr. Partridge had performed.

Dr. WARD thought Dr. Partridge voiced the sentiment of the profession of to-day when he said it was unwise to attempt to extract the child through the vagina, especially after the occurrence of such a rupture as he had described. He believed that, in the majority of cases which had been reported, the child had escaped almost entirely through the rent, and under such circumstances he thought laparotomy was the only proper resource, and the suggestion made by Dr. Lusk, with reference to removal of the uterus, was one which deserved serious consideration. He should certainly act upon that suggestion should he again be called to see such a case as he witnessed with Dr. Partridge some years ago, in which the uterine walls were so thin and friable that it was with great difficulty that the sutures could be made to hold.

Dr. W. R. GILLETTE thought the question raised by Dr. Lusk was one which might be discussed theoretically all night, and we should know as little at the end of that time as now regarding its possible practical value. It seemed to him, however, an unnecessary risk to submit the patient to, without promising corresponding advantages. It was just as possible to thoroughly

cleanse the abdominal cavity and the uterine cavity after sewing up the ruptured uterus as after laparotomy for any other purpose, and it seemed to him that removal of the uterus under such circumstances would simply add other dangers to those which already existed.

Dr. Lusk referred to the danger of gaping of the uterine wound, and added that the longer the stitched surface was, the greater this danger would be.

The PRESIDENT said that so few cases had been reported giving the results of suture in Cæsarean section that we could hardly base conclusions upon them. In the case reported by Dr. Garrigues, however, complete union had taken place, as shown by the autopsy a short time after the operation.

Dr. GILLETTE said that several years ago he was requested, by an old and quite well-known practitioner, to take charge of a woman in labor, in a rear tenement-house. The doctor had been in charge all night, and was desirous of relinquishing the case, saying that he was about to leave town and could not continue with it. Dr. Gillette consented to take the case, but insisted upon the doctor's remaining to examine the patient with him and give him the benefit of his knowledge of what had occurred through the night. While this preliminary conversation was going on, Dr. Gillette remarked that there were no ejaculations indicating pain upon the part of the patient. His suspicions and fears were considerably aroused, and were not allayed when, upon stepping into the lying-in chamber, he saw the patient looking like wax, with a pinched, worn, anxious expression, very feeble, and quite content from the fact that the pains had suddenly and entirely ceased some two hours previous.

Upon making an examination, he found evidences from palpation of a ruptured uterus, with the escape of the fetus into the abdominal cavity. The ordinary vaginal digital examination revealed no presenting part, but, upon introducing the hand, the worst fears were realized, and the case was thoroughly diagnosed as a typical one of rupture of the parturient uterus. It was, as memory told him, almost similar to the case related by Dr. Partridge. In those days little was known or thought of laparotomy, and Dr. Gillette proceeded at once to seize the foot of the child and deliver by version and extraction. It was accomplished easily. The placenta was removed by easy extraction. To shorten the story, the patient recovered without an alarming symptom, notwithstanding every disadvantage of squalor, filth, and inattention in the way of nursing was present. The case was not related for the purpose of advocating the method of treatment pursued in preference to laparotomy and the more modern and antiseptic surgical methods of treating such cases. On the contrary, Dr. Gillette thought the latter procedure was the proper one in the light of the advanced state of obstetrical practice of the present day. Indeed, it would seem almost impossible, with our present views, for a woman to recover under the conditions which must have existed in the case related. There was no doubt of the complete rupture of the uterus, as the hand was passed completely into the abdominal cavity; and how recovery could take place with the abdominal cavity full of blood, amniotic fluid, vernix caseosa, and what not, was one of those mysteries which must for ever confront the theories of antiseptics and drainage.

Dr. Lusk said that cases of rupture of the uterus had been reported in which the peritonæum was simply lifted up, but left intact.

Dr. GILLETTE supposed the peritonæum must have been ruptured in his case; at any rate, the child had escaped entirely out of the uterine cavity.

Dr. H. T. HANKS had once been called to a case of rupture of the uterus, under the care of a midwife, and on his arrival had found the patient in a collapsed condition. He was sur-

prised at the ease with which he could pass the hand through the uterine rent, seize the feet, and extract the child through the vagina. He remembered a case in the practice of Dr. Barton, of Orange, Mass., in which the child had also entirely escaped into the abdominal cavity with the exception of the feet. In this case also the doctor was able to pass the hand through the rent and extract the child. That patient recovered. Dr. Hanks thought that, where the rent was sufficiently extensive and the uterus had not so contracted but that the hand could be passed through the rent, extraction through the vagina should be preferred to laparotomy.

Dr. PARTRIDGE said, further, with regard to removal of the uterus, that he did not know that there would be any special disadvantage in doing it, and in this case it was feasible, but, on the other hand, he could not say that the procedure would offer any special advantages unless the condition were such as in the case referred to by Dr. Ward, in which the uterine tissue was so degenerated and softened that sutures would not hold; or in case the uterine rent was so lacerated and irregular that perfect coaptation could not be obtained, and it might be expected that subsequent leaking would occur through it into the peritoneal cavity; or in cases of pelvic deformity in which subsequent pregnancy would be undesirable. Women who had sustained rupture of the uterus had lived to bear children.

The point which Dr. Lusk wished to make was that, if it was dangerous to sew up the wound in Cæsarean section, because there would be a tendency afterward to sloughing and gaping of the wound, allowing of the escape of the uterine contents into the peritoneal cavity, these dangers would be even still greater in a case of rupture of the uterus; and the question was, whether it would not be better to remove the entire organ, especially as the patient was usually in good condition for an operation.

The PRESIDENT inferred from the discussion which had taken place that it was the voice of the society that, if the uterine rent were in a position to give favorable results from suture, the proper procedure would be to sew it up; but that, if the rent were in such a location, and the uterus in such a condition, as not to favor union, then probably removal of the uterus would be the better method to adopt. Each case, therefore, would have to be treated on its individual merits.

HENRY J. GARRIGUES, M. D.,

B. F. DAWSON, M. D.,

FRANK P. FOSTER, M. D., *ex officio*,

Committee on Publication.

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

Meeting of June 17, 1884.

The President, Dr. JOHN A. McCORKLE, in the chair.

Ephemeral High Temperatures in Young Children.—Dr. HENRY N. READ read a paper with this title. [See page 57.]

Dr. SAMUEL F. ARMOR remarked that the paper and cases reported brought out distinctly a clinical fact of great practical interest, namely, that high temperature in children was not nearly so significant of serious disease as in adults. A child, as we had seen, might frequently have a rapid rise of temperature, even to 105° F. or more, and as rapid a subsidence without reference to remedies. It was evident, therefore, that age had something to do with this rapid though not dangerous evolution of animal heat. And just here an interesting, although at present a somewhat speculative, question arose as to the genesis of fever. In the investigation of the question of animal heat we at once confronted one of the most singular and, to his mind, most mysterious facts in the universe, and that was the con-

stancy of temperature in health, even to the fraction of a degree, under most varying circumstances. Whether we ate much or little, took exercise or remained at rest, lived in a tropical climate or at the poles, on the mountain-top or in the valley, the result was the same—the temperature was 99°. It followed that there must be some inhibitory, regulating power in the body which preserved this normal standard of warmth. When physiology settled this question we should know more about the genesis of fever. What was it that disturbed this inhibiting, regulating power? He would not pretend to enter this field of speculative inquiry. Two main theories had been presented: The one was that it originated in living tissues—that it was an expression of the molecular activity of various forms of protoplasm—i. e., that it essentially consisted in “increased tissue metamorphosis.” The other was that it originated in disorder of the nerve-centers—that certain portions of the nerve-centers acted as reflex, inhibitory “heat-centers”—that these centers acted as the governor of the steam-engine acted. Some recent contributions to the nervous origin of fever had been made to the Smithsonian Institution by Professor Wood, of Philadelphia, and at the late Medical Congress in London. Dr. Armor said he was proud of the distinguished compliments paid by that learned body to our distinguished countryman for the work he had done in that direction. Dr. Wood had reached the conclusion, by a series of carefully conducted experiments, that the *pons* was the regulating, inhibitory thermic center, and that the increased tissue metamorphosis was a secondary fact. And still the question was open as to whether the rise of temperature was due to increased heat production, or to a retention of heat. The fever, as had been well stated in the paper, simply reduced itself to a question of the difference of the heat-producing and the heat-evolving powers of the body. Therapeutically, we tried to make these two forces compensatory to each other. Now, what was the effect produced by the various causes of fever on the “heat-center” of the nervous system? Was it over-tension in the nerve-centers, or the reverse? What was the disturbed interaction between the nervous system and the blood and tissues in the febrile process? When we were able to settle this question definitively, we should know more about the genesis of fever. It had been suggested theoretically, and certainly with great plausibility, that when, from disease or injury of the “heat-centers,” their power of maintaining tension was abolished, the affinities of the blood and tissues had unrestricted play. Hence the super-oxidation, the increased tissue change, and the pyrexia.

We might not know why in early and infantile life this disturbance of equilibrium more readily took place than in adult life. And yet we knew the fact that the brain and nerve-centers were peculiarly impressionable in early life; hence easily disturbed, giving rise to ephemeral forms of fever, convulsions, etc. We found also that elevation of temperature was much more easily subdued in infantile than in adult life, and by simpler means. He heartily agreed with the author of the paper in condemning the constant resort to large doses of quinine, aconite, digitalis, veratrum, etc., in the treatment of these ephemeral high temperatures. First try the simpler remedies. Without reference to unsettled theoretical questions, we could often make the heat-evolving compensatory to the heat-producing powers by the judicious use of baths. Quite recently he had seen persistent convulsions in a child with a temperature of 105° rapidly relieved by the simple application of an ice-pack to the head and the nape of the neck. The temperature came down rapidly, with a prompt subsidence of the convulsions. While he was in Edinburgh, some years since, Dr. Keith, the eminent ovariotomist, had called his attention to the fact that, by cold local packs to the base of the brain and to the neck, he could generally re-

duce the temperature about 2°—all, perhaps, that he required after surgical operations.

In this connection Dr. Armor spoke of the use of the cold bath in summer complaints of children. With a hot, dry skin and a temperature of, say, 105°, it had been his invariable practice for years to resort to the cold bath. Theoretical objections might be urged against it. But certainly no febrifuge was so effective. The temperature usually came down rapidly under the use of the bath, with an amelioration of the abdominal symptoms. Injections of cold water were also attended with benefit. Dr. Armor, in conclusion, repeated the remark that these simpler means of controlling fever, especially with children, were often more effective, and certainly less dangerous, than the mere potential drugs so often administered.

Dr. JEROME WALKER spoke of his use of the cold bath in the high temperatures of children. He liked it much as a general febrifuge. His experience had been pretty large in the treatment of diseases of children in the Sea-side Resort. He spoke also of the use of oily inunctions for the same purpose. He had known the temperature to be reduced 3° by that means alone.

Dr. ARMOR had also been accustomed to reducing temperature by means of inunctions. With children, especially in some forms of eruptive fevers attended by high fever, it often proved a soothing and valuable febrifuge. But he rarely found it reduce the temperature more than 1.5° or 2°. If the temperature was very high and the skin dry, he preferred the cold bath.

Indigestion and Intestinal Catarrh in Infants.—Dr. E. H. BARTLEY read a paper with this title. [See page 58.]

Dr. WALKER said that, having agreed to say something at this meeting, and having had no time in which to write an article, he had looked over Dr. Bartley's paper, and, while there were many good things in it, especially the remarks about the antiseptic treatment of diarrhoea, he was almost bewildered by the multitude of suggestions. The fact was, there was so much diversity of opinion among practitioners in regard to the causation and treatment, that it was high time that a systematic study of the diarrhoea of children should be made by a well-appointed committee, which would take the time necessary for a thorough investigation. One had only to glance at the various text-books to see a variety of views and diverse methods of treatment. He was reminded of two investigations, and diverse reports on the same, made in England several years ago, of an endemic of cholera infantum by equally good committees. A few years ago he had had occasion to examine the death certificates at the office of the Board of Health, and had been surprised at the variety of causes of death assigned in connection with diarrhoeal diseases—gastro-enteritis, catarrh of the bowels, diarrhoea from dentition, cholera infantum, summer diarrhoea, summer complaint, gastritis, enteritis, vomiting and diarrhoea, etc.

Every year at the Sea-side Home filled-out blanks were received from physicians giving the cause of sickness, for example, as cholera infantum, when the closest inquiry failed to show that there had been any vomiting, or that the diarrhoea had been watery—the cholera of infancy. The looseness with which terms were used, as shown by these blanks, was astonishing.

In regard to the classification of diarrhoea, a simple and quite accurate method seemed to him to be: 1. Simple or irritative diarrhoea, due to undigested food or other irritant. 2. Inflammatory diarrhoea. 3. What might be called nervous diarrhoea, due to weakened nerve-force and loss of muscular tone. All forms of diarrhoea were influenced by excessive heat and by changes in temperature, but it was not necessary that there should be decided changes in temperature to produce diarrhoea; “devitalized air” in dwellings, as Dr. Richardson, of London, called it, was sufficient.

In speaking of the treatment of diarrhoea, Dr. Bartley had

spoken chiefly of the medicinal and dietetic, whereas he (Dr. Walker) placed the hygienic first. He had seen, for instance, in the city as well as at the sea-shore, severe forms of diarrhoea relieved by keeping the children out of doors, in the air but protected from the sun. He believed that better results would be obtained if physicians paid more attention than was generally paid to the details of hygienic treatment, instead of cursorily passing them over or leaving them almost entirely to nurses.

As to the feeding in diarrhoeal troubles, from what he could learn from others and from his own experience, milk prepared in some way was the only reliable food, and all the patented baby-foods, and all the imitations of mother's milk, must give way to it; but what method of preparing milk could be adapted to all children had not yet been discovered, although he believed that observers were working in the right direction—i. e., 1, to keep the milk in as nearly as possible the condition it was in when taken from the cow, and 2, to prevent fermentative and putrefactive changes in the alimentary canal; and there was where the antiseptic treatment of Dr. Bartley was of value.

After a correspondence with Dr. Corson, of Conshohocken, Pa., the speaker had used, where he could, warm, undiluted cow's milk, even with babies suffering from diarrhoeal troubles, and had been much pleased with the results. He had seen cases where milk prepared with barley-water, and in various ways, could not be digested, and yet whole undiluted milk was readily digested. The pancreatizing of milk was a valuable step in the right direction. The importance of being explicit as to directions was seen, in certain instances, where the mother had been told to give barley-water in place of milk, but was not told when to discontinue the use of the barley and to return to milk. The children were in a starving, marasmic condition.

He had been interested in ascertaining whether homœopathy was particularly "good for children with diarrhoeas," and had had abundant opportunities for observing the effects of homœopathic remedies, but had failed to find that they were any more efficacious than, if so generally as, those of the "old school." After all, it was the difference in the practitioners rather than in the medicines of the "schools" that gave different results.

As to the medicinal treatment, though he considered it of the least importance, yet it was important. The medicinal agents might be classified as follows: 1. Artificial digestives—pepsin, pancreatin, etc. 2. Medicines that removed or allayed irritation, viz., castor-oil, bismuth, etc. 3. Nervines or sedatives. 4. What might be called physiological antidotes—ipecac, corrosive sublimate, etc. In his hands Dr. Goodell's colic mixture, with a small quantity of deodorized tincture of opium or fluid Dover's powder, had repeatedly served a good turn in quieting a fretful child, and so decreasing the number of discharges; but all children would not take it readily, any more than they would the bromides, chloral, lupulin, etc., and he would like to hear from those present what had been useful in their hands.

Rectal injections of cold water he had also found, at times, would accomplish the same ends.

As a clinical fact, he called attention to the inability at times, in cases of severe prostration, of inducing vomiting even by apomorphine, and to the result being attained by the subsequent hypodermic injection of ether, ammonia, or some other stimulant.

Several years ago Dr. Hutchins, of this Society, had read a paper on "The Use of Salicylates in the Treatment of Gastro-intestinal Diseases." From this he had been led to use a mixture of salicylic acid, prepared chalk, mucilage of gum arabic, and spearmint-water in diarrhoeas with excellent results. An objection to bismuth was the discoloration of the stools. As to astringents, the *Geranium maculatum* seemed better than kino

and catechu. Dr. Bartley's suggestions as to boro-glyceride and other emollient and antiseptic remedies were excellent.

In conclusion, Dr. Walker asked the pardon of the Society for the rambling character of his remarks, which the want of time for preparation had rendered necessary. What he had said gave his individual opinions, and should be so considered. What was needed was the systematic and combined work, on some definite plan, of a number of gentlemen. Then individual opinions by classification and comparison would be of value. For this end he would be willing to work at the Sea-side Home and in the city in conjunction with other workers.

Dr. READ, referring to Dr. Bartley's remarks upon starchy food, had understood the doctor to say that "under one year of age starchy food should never be given to infants." He would dissent most strongly from this opinion. The truth was that much error existed in the wholesale denunciation of starchy foods, which was so often seen, and this variety of food was held accountable for much damage with which it had nothing to do, or rather with which it would have had nothing to do had the food been given of a proper kind and quantity. There were many varieties of starch, and there was as much difference in regard to the digestibility of these various starches as there was about the digestibility of the different kinds of meat. Potato-starch was the most difficult, and barley-starch the easiest of digestion, and between these two lay a large number, of greater or less ease of digestion. Starch, in its various forms, comprised the larger portion of infant food, and to say, therefore, that this kind of food should not be given, was to deprive ourselves of the bulk of foods suitable for the infant. Under the age of two or three months, it was true, children had not the full digestive powers for starchy foods, but that they did digest them, even at this age, was a clinical fact familiar to any one who had seen a child brought up from birth on barley, granam, oat-meal crackers, etc. The digestive powers of the child in respect to starchy foods increased rapidly, till, at ten or eleven months of age, it equaled, at least in diastatic effect, that of the adult. The clinical fact was, that children were fed on starch; that to milk we were constantly obliged to add starch of some kind. The real point in this troublesome problem of the proper feeding of infants was, not the banishing of starch altogether, but its proper selection, proper preparation, and proper administration.

Dr. ARMOR had one or two suggestions to make on the etiology of the disease; for, until we more clearly comprehended questions of causation, our treatment must necessarily be more or less empirical and uncertain. He desired to direct attention specially to three factors which had certainly much to do in the production of these gastro-enteric troubles of children, namely: solar heat, softening of the mucous membrane, and the development of low micro-organisms in the gastro-intestinal tract. That the disease had some relation to high temperature of the atmosphere need not be discussed. It prevailed only during the hot summer months, and had, therefore, been well named "summer complaint of children." He desired to direct attention, however, more particularly to the fact that excessive and protracted heat tended, in some way, to the production of a kind of gelatinous softening of the mucous membrane. This had been frequently observed post mortem, due allowance being made in all such cases for post-mortem softening. It was much more marked in hot than in cold weather.

To this predisposition to softening of the mucous membrane, the result of long-continued heat, there was added a catarrhal state of the membrane, in which the stomach was flooded with alkaline mucus, which not only diluted the natural gastric secretion and thereby weakened the digestive power, but, as modern research had shown, furnished the most favorable

possible condition for the generation and development of low micro-organisms, which contributed to putrefactive and fermentative processes. Had we given sufficient attention to the effect of these low organisms on a mucous membrane softened by heat and bathed in a copious secretion of alkaline mucus? And, if we added to these another factor which was a most prolific source of gastro-intestinal troubles with children during the summer months—namely, over-feeding, or feeding with unwholesome food—we grouped together elements of causation that might have important bearings on the treatment of “summer complaints” of children. He would not take up the time of the Society in discussing points of treatment at present. Many valuable suggestions had been made in the paper just read. Rational therapeutics must, of course, always rest largely on observation of fact—on carefully conducted experimental observation at the bedside—but pathology might give us valuable suggestive hints by directing us in these lines of observation.

Dr. J. T. CONKLE spoke in reference to warm milk as a food for children with gastro-intestinal diseases, and indorsed it heartily. If that could be secured, he thought almost all other kinds of milk-food could be discarded. It was well known that cow's milk underwent at once a great change, and, when the fat globules began to rise, it was no longer milk. All the skill of the chemist could not force the cream back into the milk. He had had experience with several cases of children suffering from summer complaints who were unable to take *any kind* of food. In one case he had asked the parents to go to the country and purchase a cow, and keep it for the use of the baby. They did so. The cow was driven up every three hours during the day, and once at night, to be thoroughly milked. The milk, drawn into a cup taken from a can of warm water to preserve the animal heat, was taken undiluted, and readily digested. This plan of feeding was, of course, only practicable in a few cases, but it demonstrated the efficacy of milk—that is, milk in contrast with that which bore the name in this city.

Dr. BARTLEY acknowledged the justness of the criticism that there was too much in his paper. His object had been simply to bring the subject before the Society for discussion. His paper had been made up of a series of suggestions. It was not intended to discuss the whole subject, because it was too large for a single paper. He admitted that there were a good many suggestions in the paper that were mere suggestions. In regard to the use of warm milk, that, of course, ought to be at once dismissed. It was impracticable. Even if we had the cow in our back yard, we could not look after it so as to procure warm milk that would be perfectly wholesome. The so-called farm dairies that we had driven up to the doors every morning were certainly inviting if we were to go behind the scenes and see the way the milk was manufactured—cows in stables without ventilation, and filth abounding on every side. Such milk could not be very wholesome. Then, if we took the milk from the country and produced in a wholesome way and transported it to the city, with its constant jarring, that which was handled three times before it came to the city and three times after it reached here, jolting all the time, it was pretty well churned by the time it got to the child. Take such a sample of milk, place it under the microscope and compare it with a sample of fresh milk, and we should find that, whereas the fresh milk was almost transparent between the fat globules, the churned milk showed a conglomerated condition of the casein. The casein beginning to undergo coagulation in many cases, this condition of partial coagulation would be found: the fluid was not perfectly transparent as it should be between the fat globules. But this paper had not been written for the country; it was meant more for the city, and based upon practice as seen

in dispensaries. Of course, if we were dealing with children of wealthy parents, we could be more successful, but with the poor tenement-house population we must do the best we could. Now, in regard to the digestion of starch, the recommendations he had made were based upon experience, not upon chemical analysis. He had tried the matter to his heart's content. He had seen some of the cases of those gentlemen who had recommended barley-water, starch, and everything except some imitations of milk. He had seen children recover without medicine. In regard to barley-water, he would say that in ordinary barley-water there was not so much starch, but a great deal of extractive matter, which changed the question entirely, and, further, that in the majority of cases the roasted barley was used, and in that there was a considerable amount of dextrin. In regard to Dr. Walker's suggestion of the mixture of Dr. Hutchins, when Dr. Hutchins presented that paper he (Dr. Bartley) tried it in several cases. Dr. Read also tried it, and, after two or three fatal cases, both had stopped using it. The trouble was, there were so many varieties of diarrhoea that, if we devised a prescription for a certain kind of diarrhoea, somebody else would use it for another kind and without the success anticipated. It required a great deal of care to differentiate cases. Bismuth, he thought, would always be used. It was valuable not only for its soothing effect upon the mucous membrane, but as an antiseptic. It should be used in large quantities—ten, fifteen, or twenty grains; small doses did little or no good.

Z. T. EMERY, M. D., *Secretary.*

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Meeting of June 18, 1884.

Two Cases of Intestinal Obstruction: one from Impacted Fæces; the other by Stricture due to Cancer, with Specimen.—Dr. GEORGE W. VOGLER read the following paper:

Modern writers usually enumerate the causes of intestinal obstruction as follows: 1. Congenital malformation. 2. Internal strangulation. 3. Intussusception or Invagination. 4. Constriction. 5. Compression. 6. Impaction of foreign bodies or intestinal concretions. 7. Impaction of faecal masses.

Upon looking through the statistics of intestinal obstructive diseases, certain striking facts are noticeable. It is difficult to estimate the comparative frequency of intestinal obstruction. It is by no means a very common affection, always dangerous, and in a very large proportion of cases resulting fatally. Statistics show that most forms of obstruction of the bowels are more often met with in the male than in the female subject, the exceptions being obstruction by gallstone or faecal matter; constrictions by peritoneal or other adhesions, and compression of the intestine by tumors or displaced viscera.

As regards age and the portion of the intestine involved:

Obstruction by gallstones always occurs late in life, and involves the jejunum and ileum. Intussusception may occur at all ages, especially during childhood, and is confined chiefly to the large intestine.

Stricture is a disease of adult life (of course always omitting congenital malformation), involving the large intestine; three fourths of the total number being below the middle of the transverse colon.

With these few introductory remarks, I will proceed at once to the reading of the notes of a case of intestinal obstruction by constriction due to cancer:

Mrs. Mary Müller, German, aged fifty-eight years, widow, was admitted, April 18th, into the ward of my friend and colleague, Dr. Adam Tran, at the German Hospital. For some six months previous to her admission she had been under almost constant treatment by physicians. She states that constipation was her chief symptom, for which all kinds

of purgative remedies and various procedures were used, with but little avail. She was anæmic, considerably emaciated, and very weak. The chief symptoms were obstinate constipation, great tympanites, severe pain, and almost incessant vomiting. The temperature and pulse were not much disturbed. A careful physical exploration of the abdomen, vagina, and rectum, elicited no sign of a tumor. A long œsophageal tube was readily passed into the bowel, even to the length of twenty-seven inches, according to the statement of the medical resident. In brief, it seemed that the case was one of a paresis of intestinal movement, due to some defect either in the intrinsic ganglia and nerves of the muscular intestinal coat, or through imperfection of the muscular tissue by degeneration, or both these causes combined. The treatment consisted in the use of purgative remedies and large watery and stimulating enemata, with comparatively no results; turpentine stupes, followed by hot flaxseed poultices, gave some ease. The introduction of a long œsophageal tube into the bowel and massage of the abdomen afforded much relief. So great was the tympanites shortly before her death that respiration was materially interfered with, necessitating the introduction of a small aspirating needle to afford temporary relief. She was fed with pancreatized milk by the bowel, and Cibil's beef extract and stimulants by the mouth. Death occurred April 29th, by asæthia.

Owing to the interest taken in the case during life, the following gentlemen were present at the post-mortem examination, by invitation of Dr. Trau: Dr. Formad, Dr. Dercum, Dr. F. H. Gross, Dr. Barton, Dr. Jones, Dr. Vogler, and the residents, Dr. Weed, Dr. Stabler, and Dr. Rehfs. The body was emaciated and abdomen greatly distended, the intestinal convolutions being plainly mapped out upon the abdominal wall. The distension of the intestines, particularly the colon, was simply enormous. Some adhesions were noted. At the lower part of the descending colon a constriction was seen. This part of the intestine was carefully removed, and, when subjected to the hydrostatic test, was found to be impervious to a downward current, but readily permitted the passage of an upward current.

On opening the specimen along the line of the mesenteric attachment, a valve-like scirrhus tumor was exposed, which readily accounted for the phenomena observed in life—viz.: 1. Ready introduction of fluids into the bowel by a fountain syringe, also a rectal tube. 2. Failure of the fluid to be voided after withdrawal of the tube. 3. An almost total absence of the natural passages from the bowel. The specimen, which I now pass around, is well worth a careful inspection, the lesion consisting of two valve-like scirrhous masses completely encircling the bowel, to which it is alone confined.

The other case of intestinal obstruction was due to impacted feces:

Mrs. F., aged sixty-four, a private patient, was afflicted for many years with habitual constipation, frequently going many days without an evacuation. She began to complain, some three weeks previous to my visit, of severe pain in the left lumbar and umbilical regions, and an impossibility to relieve the bowels by powerful purgatives. No other symptom of note had troubled her up to within a few days, but now she was suffering with some fever, pain, nausea, and exhaustion, and was passing some bloody mucus from the bowels. Careful examination of the abdomen and vagina revealed a large, hard, and irregular-shaped body or tumor, situated in the left lumbar region, painful to the touch, slightly movable, and entirely free from the womb and its appendages. The diagnosis was determined by the history, the absence of acute symptoms, physical examination, and the process of exclusion of other causes of obstruction. By this time her life was in great danger. The treatment consisted chiefly in the frequent use of large enemata of soap-water, castor-oil, turpentine, and laudanum. Small doses of calomel and ipecac were given by mouth. After two or three days, some small and hard pieces of fecal matter were passed for the first time, and a careful examination indicated the mass to have broken in two—one occupying the old position, the other the sigmoid flexure. She was vomiting at this time. The quantity of fecal matter that came away during the following week was enormous. At one sitting,

as many as twenty-seven large pieces of hard, dry fecal matter came away, and I give this merely as an illustration of the quantity passed at one time. Frequently it became necessary to unload the rectum by digging out the masses. At times bloody mucus came away. Of course, the pain was very great during these operations, and opium had to be resorted to. Gradually the swellings began to grow less, and finally disappeared. The patient was able to trace their slow movements along the intestines by the intense pain. Only after weeks of careful treatment did this patient fully recover her health, and, strange to say, with a radical cure of her habitual and long-standing constipation.

The Demand for Early Exploratory Trephining in Depressed Fractures of the Skull.—Dr. JOHN B. ROBERTS read the following paper:

In using the term trephining I apply it to all methods of removing portions of the cranial wall, whether by the trephine, saw, burr of the surgical engine, gouge, or cutting forceps.

From observation, experience, and considerable acquaintance with the literature of the subject, I am convinced that surgeons are induced to decline or postpone the operation of trephining because of a mistaken idea of its serious nature, and a misunderstanding of the reasons for its adoption.

The frequency with which successful trephining was done in past centuries without the benefit of our improved methods and instruments, and the infrequency of death or serious symptoms from the operation itself at the present day, convince me that, though a capital operation, it is not one having in it many elements of danger. That many deaths occur after trephining is admitted. Such fatal results must often occur, for injury to the skull-bones is usually and almost necessarily coincident with disturbance or actual lesion of the brain or its membranes. I believe that more deaths are attributable to non-performance or delay in resorting to the performance of trephining than to its adoption. It behooves those who greatly limit the application of the operation to prove, by citation of cases, that a fatal issue has been induced by the procedure itself in a sufficient number of instances to throw the operation into the class called dangerous. To merely show that many patients with serious skull injury recover without trephining is not sufficient.

Much controversy on this subject would be avoided if the advocates and the opponents of an extended use of trephining would clearly formulate their opinions as to the theory upon which the operation is performed. In my opinion, trephining should be regarded in the light of an exploratory rather than a therapeutic procedure. I incise the scalp in closed fractures of the skull, not because the incision cures, but because it tells me the condition of the bone, without which knowledge I am unable to treat the patient rationally. The uncertainty of the lesion is, in my opinion, more dangerous to health and life than the conversion of a closed into an open fracture of the skull, because the observation of the profession teaches that open cranial fractures do not resemble, in fatality, similar open fractures of long bones. In truth, I would be willing to make a closed fracture of the thigh or leg an open one, if it was otherwise impossible to replace fragments which were threatening life. If I but learn the character of the skull lesion, I am acquainted with surgical expedients that render restoration to health more probable than the complication due to the incision renders it improbable. Hence I am justified, nay, compelled, by my reason, to advocate exploratory incisions of the scalp in obscure injuries of the skull.

The same line of reasoning forces upon me the conclusion that I should trephine whenever the fracture, whether originally an open one or so made by my incision, presents the possibility of the inner table being detached and splintered more extensively than the outer. In other words, I should cut the scalp to see the condition of the outer table; I should cut the bone to see

the condition of the inner table, in every case where the risk of obscure knowledge is greater than the risk of divided scalp and perforated bone.

Many experimental fractures made in the dissecting-room, and observation of cases in the practice of myself and of others, teach me that extensive shattering of the inner table, with only a moderate amount of fracturing of the external table, is of frequent occurrence in other as well as in punctured fractures. I admit that the condition in the dead subject, with its shrunken brain, is different from that in the living; but there is much evidence of the same splintering to be found in the study of accidental and homicidal skull fractures. Punctured fractures have long been treated by early trephining, to avert encephalitis. For the same reason I recommend trephining in more diffused and less accentuated fractures. It is to prevent inflammatory sequences due to splinters forced into the membranes and brain, and to avert the consecutive occurrence of epilepsy and insanity, that the operation should be performed; not because of the fear that symptoms of compression of the brain may arise, nor because necrosis of detached portions of bone may occur.

I am not a believer in the pathology that teaches that the symptoms which we call "compression of the brain" are due to displacing pressure exerted on the brain substance. How can a slight or even a considerable depression of a limited area of bone produce much pressure upon the brain substance? How can the usually limited extravasation of blood under the seat of fracture fatally compress the brain, which is of firmer consistence than the blood itself? A rapidly acting heart, after violent exercise, will throw enough additional blood into the cerebral vessels to produce more intracranial pressure than the ordinary depressed fracture. The complexus of symptoms called compression of the brain may possibly be the result of a disturbance in the local capillary circulation of the membranes and subjacent nervous tissue; but I can not believe it to be due to compression or displacement of the brain itself. It is more probable that compression symptoms are the results of encephalitis, due to injury from spicules of the inner table, or to the irritation of intracranial bleeding.

So soon as the profession repudiates the idea that brain displacement is what causes compression symptoms, every surgeon will be convinced that early trephining is a proper exploratory procedure in order to determine what measures are demanded to avert encephalic inflammation.

"Compression of the brain," as seen after injury, should be translated "inflammation of the brain," and looked upon as probably due to unrelieved irritation of the brain periphery, from traumatic causes. Not until this is so understood will the discussion as to the utility of trephining in depressed fractures cease.

I repeat, then, that trephining is not a therapeutic but an exploratory operation; and, as such, is demanded with much greater frequency than is usually supposed. If it is to be employed for exploratory and diagnostic purposes, early recourse thereto needs no defense.

When about to use the trephine itself for perforating the skull, to allow elevation and extraction of fragments, the surgeon should select a small conical instrument; one not over three eighths of an inch in outside diameter at the cutting end is large enough. Those usually kept by the instrument-makers are too large. It is only necessary to bore an opening sufficiently large to admit the end of the elevator; hence a small trephine is always more proper than a large one, except in those comparatively rare cases where a large disc is to be removed over the line of an old depressed fracture. Recently, I visited the four principal instrument-makers of Philadelphia, and could

not find in stock any trephine as small as that which I recommend. The belief which has caused trephines to be made so large is founded on an erroneous theory.

In recent depressed fractures the trephine crown should be applied upon the solid bone, and should overlap the *least* depressed edge of the displaced fragment. This allows more ready elevation or extraction by means of the elevator, because the *most* depressed edge is very frequently beveled, with the inner table broken at a more distant spot, and is thereby wedged under the solid portion of the skull at that side. Elevation at the least depressed edge is effected more readily and with less danger to the brain from the manipulation.

To conclude, I assert that in all subcutaneous injuries of the head with possible existence of depressed fracture, an immediate exploratory incision should be made in the scalp. In all instances of depressed fracture with *possible* existence of splintering and spiculation of the inner table, an immediate exploratory trephining of the skull should be done.

COLLEGE OF PHYSICIANS OF PHILADELPHIA.

Meeting of May 7, 1884.

On a New Method of recording the Motions of the Soft Palate.—DR. HARRISON ALLEN read a paper on this subject, illustrated with drawings of the apparatus employed, and with numerous graphic tracings.

When a straight rod was passed through the nose from before backward in the living subject as far as possible, it would be found to impinge against the roof of the naso-pharynx. In this position it was not influenced by any motions of the soft palate; but, if the end of the rod which remained without the nostril was raised so that the rod was brought in contact with the anterior border of the nostril, the pharyngeal end would lie in a position which would cause a decided motion to be transmitted to it when the soft palate was raised. He had for a long time relied upon this test to determine when an instrument thrust through the nose had reached the region of the naso-pharynx.

Having observed that the sensations upon the fingers when the rod was thus held in position varied according to the character of the sound of the voice, he had made a series of careful comparisons, which had led him to infer that the elevation of the soft palate was greater in the sounds of *ä* and *ë* than in the sounds of *i*, *ö*, and *ü*, or in any of the short vowel sounds. Substituting for the support of the fingers a flexible copper wire, one end of which was attached to the head-band in common use for the support of the laryngeal mirror, the wire itself being bent round the rod so as to maintain the apposition of the rod against the anterior border of the nostril, he had found that the motions of the palate caused a perceptible deviation of the free end of the rod. If, while the wire was thus supporting the rod, a rhinoscopic examination was made, the pharyngeal end of the rod was found projecting from the posterior nares into the naso-pharynx, at a point about midway between the roof and the upper surface of the relaxed soft palate. The rod being carefully adjusted so as to secure the best effects when the palate was raised, and the subject seated in front of the Ludwig kymographion, which had been previously prepared with carbon-covered paper, it had been ascertained that when the free end of the lever touched the cylinder, at a time when the latter was in motion from right to left and the soft palate was raised, a distinct tracing appeared upon the cylinder and the differences between the long and short sounds of the vowels were found to correlate with the curves made by the rod upon the kymographion.

When the instrument was in position and the palate was raised (as in the voluntary motion which constituted the first act of deglutition), a tracing was made, which, when analyzed, was found to be composed of a number of acute depressions interrupting a horizontal line, and which yielded for examination three distinct parts: 1, a long, concave, slightly undulating line, which represented the extent of downward deviation of the rod from its horizontal position; 2, a short vertical line, which represented the descent of the palate, and began at the point at which the curved line ended and terminated at the horizontal line; and, 3, the horizontal line itself, which represented the record made by the end of the rod when at rest upon the surface of the moving cylinder. It was evident that the number of the notch-like depressions would answer to as many acts of elevation as were recorded at a single trial. The differences in the depressions would be the differences in the acts of elevation themselves. The degree of elevation and the abruptness of the fall were constant; but the length of the curve would depend upon the time taken by the palate to reach its highest elevation and the time it was sustained in that position before it fell to the position of rest.

The outlines, as a rule, were assumed to be due to the upper surface of the soft palate striking the end of the rod as it lay within the naso-pharynx. But the rod might be pushed from right to left or from left to right in a horizontal direction by the contraction of the two levator palati muscles; for the elevation of the palate was dependent upon the force exerted by these muscles, and, if the rod was in the way of one of them, it would be pushed to the median side and to a point nearer the center of the naso-pharynx than it occupied prior to the time of contraction. If the rod was thrust through the right nostril, it would be moved from left to right; if it was thrust through the left nostril, it would be moved from right to left. These curves were best recorded by placing the kymographion-cylinder in a horizontal position.

In making the tracings in either of the positions, the head must be carefully supported. A dentist's head-rest answered an admirable purpose. If at any time it was found necessary to estimate the amount of variation in any curve due to the motion of the head, a piece of wire attached to the head-band might be made to touch the cylinder a short distance above the position of the index on the lever.

As it was desirable to have a name by which the instrument could be designated, he would propose for it the term *palate-myograph*. In an exact sense it furnished the basis upon which the motions of the levator palati muscles (and through these structures the motions of the soft palate as well) could be recorded, and hence was a *myographion* of a particular pair of muscles whose general function was already known.

Dr. Allen then gave an interesting summary of the methods employed by other observers, and an account of various facts that his own method had brought out. After this, he continued substantially as follows:

The fact that the soft palate was raised in the articulation of all articulate sounds, that it was raised in the acts of swallowing, of coughing, of hacking, could readily be demonstrated. The length of time that it remained elevated, and the duration of the time of ascent and descent, could also easily be ascertained. The palate was seen to be raised once only for some words, twice for others, and three times for others. The numbers of these motions were invariable within a narrow range of individual variation. The size of the curves, however, was not fixed, owing to the difficulty of always reaching precisely the same spot of the broad upper surface of the soft palate. But the curves, whether deep or shallow, held the same proportions one to another. By proper care in freeing the rod from contact

with the salpingo-palatal fold, and in placing the rod about the center of the palate, the exaggeration of the curve could be prevented in great measure. It was evident that variations in the size of the bulb at the pharyngeal end of the rod would cause corresponding variations in the size of the curves. Hence it was recommended to preserve the form and size of the bulb described, and to free it from mucus.

Even if the same spot could at all times be reached, would it be reasonable to expect the curves to have uniform values for the same sound in different individuals, or in the same individual at different times, or even in the same individual at different times in a single sitting? The soft palate was but partially under the control of the will, and this control varied in different persons. The palate, like other muscular structures, was subject to fatigue, or might act irregularly from prolonged contact with the metallic rod. Again, the personal element that entered into the variation in the transit of volitional impulses must be as appreciable in the case of the soft palate as in that of any other muscular apparatus in the economy.

On the whole, it might be said that the sources of inconstancy of the curves were not sufficient to invalidate the claim of accuracy for the method.

The palate-myograph might be of use in studying the mechanism of the soft palate in disease as well as in health. It was evident that in paralysis of the palate the motions would be absent, and that by this method a means of detection of this condition was available. It might probably prove of use in studying stammering, and in determining the degree of degeneration of the levator-palati muscles in progressive dry aural catarrh.

As the soft palate ascended, the oral surface became concave. This concavity was occupied by the convex dorsum of the tongue in some sounds, like the consonant quality, *kā*, *qu*, etc., but might be free from the tongue in other sounds, like that of *o*. The elevation of the palate was not the result of the pushing up of the relaxed velum by the lingual basi-dorsum, but of active elevation by means of its own muscles. The correlations of the tongue with the palate were, as a rule, notwithstanding, exact enough to warrant careful comparison of the two factors in the mechanism of speech.

The palate-myograph might be employed in the study of phonetics, together with the different forms of glossographs as an accessory, if the premises put forward were correct.

On the action of the palato-pharyngeal and zygomatic muscles little could be said here. He had made a number of observations with a long, curved rod passed through the nose, and had ascertained that the approximation of the two palato-pharyngei might be recorded, but the retention of the rod in this position was painful, excited a little bleeding, and soon threw the pharynx into an excited state.

The plan of holding the rod in any desired position by the flexible wire and head-band could be used in keeping instruments in position—such as the snare, the syringe, etc.—so that the head-band might be employed in removing growths from the naso-pharynx and the nose.

PHILADELPHIA CLINICAL SOCIETY.

Meeting of June 27, 1884.

The President, Dr. HENRY BEATES, JR., in the chair.

Traumatic Sciatica and its Relation to Hip Injuries.—Dr. G. BETTON MASSEY read a paper with this title, in which he gave the histories of six cases, in the majority of which the sciatica had been overlooked while attention was directed to a search for osseous injury. In the first case he was called in

consultation to see an aged gentleman who had fallen on an icy spot of pavement eleven days previously. In falling he struck heavily on the left hip, and it was with difficulty that he arose and walked home—a distance of four blocks and a half. His family doctor, a prominent physician and an expert diagnostician, when called in, searched diligently for fracture, but could find none, notwithstanding the evident helplessness of the limb and the attacks of excruciating pain that was made worse by movement. At the time he was called in the physician had about concluded that the pain must be imaginary. On examination, the absence of any kind of fracture was apparent. The patient could lift the limb but a few inches from the bed. He was suffering from continuous and severe pain, felt most at points corresponding to the sacro-iliac notch of the affected side, behind the head of the fibula, and behind the external malleolus. The pain was aggravated by any movement, but especially by flexion of the thigh and extension of the leg. It was clearly a case of sciatica caused by contusion of the nerve in falling. At the request of the medical attendant, the reader of the paper joined him in the care of the case and applied the continuous descending galvanic current to the affected nerve, ending each sitting with a series of muscle-contracting interruptions of the current, great gentleness being required at first to avoid aggravating the pain temporarily. Good effect was manifest after the first visit, and eleven applications sufficed to establish a complete cure, recent careful inspection failing to detect either awkwardness of gait or atrophy of the posterior muscles.

The second case was that of a German woman aged seventy-three. On the 15th of January, 1883, she fell on the ice, fracturing the neck of the femur outside the capsular ligament. After she had been totally neglected for two weeks, a member of the family asked the reader of the paper to take charge of the case. He found the limb an inch and a quarter shorter than its fellow and greatly everted. At the seat of injury the great trochanter was lost in an abundant deposit of callus. No crepitus could be found. Great pain existed throughout the distribution of the large sciatic nerve, being especially felt in the peroneal and posterior tibial branches. In view of the age of the patient and the attempt at union already made by unaided nature, it was deemed unwise to interfere with the broken bone, so remedial efforts were directed entirely toward the relief of the sciatica. A series of blisters was directed, chloroform injections were made, various stimulating and anodyne liniments were applied, together with the internal administration of opiates and sedatives, but he felt bound to say the case seemed to improve slowly without being affected by any of these remedies. Electricity was not used, as the patient lived too far away to make it possible to apply it with sufficient frequency, and the friends declined to have her removed to a hospital. The pain continued over a year in gradually decreasing severity, and, although the patient had now been able to walk with crutches for some months, there was much atrophy of the muscles supplied by this nerve.

The four remaining cases were selected from the large number of cases of sciatica treated by the writer at the electric clinics of the Orthopaedic Hospital and Infirmary for Nervous Diseases.

The third case was that of a healthy hod-carrier, who was sent from Dr. Wharton Sinkler's clinic November 16, 1881. Seven weeks before, while he was carrying his usual burden up a ladder, his right foot slipped on a stick and threw the thigh into extreme flexion. He immediately felt an acute pain at the point of emergence of the sciatic and following that nerve down the thigh into the peroneal region. It was sharp and pricking in character, and had remained continuously present since the accident, being worse at night. He was unable to walk more

than a block at a time, and presented a gait markedly characteristic of sciatica. No atrophy was found. He was placed upon the use of static electricity, positive sparks being drawn from the painful points and the course of the nerve. After the fifth application it was noted that he was much better; after the twelfth that he walked three miles to the hospital; and after the twenty-second he was discharged cured.

The fourth case was that of a carpenter, aged sixty-eight, who was sent from Dr. Sinkler's clinic September 29, 1880. A healthy man, eight months before admission he fell on the ice, striking the right hip. He was compelled to remain in bed six weeks, suffering from pain in the region of the small and great sciatics. His physician was uncertain whether fracture was present or not. On examination, the gluteal and flexor muscles of the right leg were found much atrophied. He complained of great pain in the course of the right sciatic to the knee, and also in the distribution of the external peroneal. At times he felt some pain in the left leg. He was ordered the constant galvanic current thrice weekly. After forty-two applications he was noted as entirely well.

The fifth case was that of a man, aged forty, who was sent from Dr. S. Weir Mitchell's clinic May 6, 1881. Four months before he had fallen and dislocated his right hip. This was reduced shortly afterward, and he remained in the hospital eleven weeks, during which time, and up to his appearance at the clinic, he suffered from much pain throughout the sciatic distribution of that side. There was considerable atrophy of the buttock and limb—a difference of one inch and a quarter being found six inches below the trochanters. He was placed upon five-grain doses of iodide of potassium, and the constant current was applied thrice weekly. After thirty-five applications of the battery, considerable quantities of the iodide having been taken, it was found that the pain had ceased, but that some atrophy remained.

The sixth case was that of a porter, aged thirty-nine, who was sent from Dr. Mitchell's clinic June 30, 1881. Fifteen months before, he had been crushed between a platform and a moving car, by which the pelvis had been fractured on the right side. At his first appearance at the clinic some crepitus was still present, and there was two inches shortening of the right leg. He complained of much pain in the region of the sciatic nerve of the right side, which was increased by motion and exercise. He had been blistered and was taking five-grain doses of the iodide of potassium when he was sent to the electrical clinic. After twelve applications of galvanism, with some benefit, the summer vacation compelled a discontinuance, and he did not reappear in the autumn.

The obvious conclusions to be drawn from these cases were stated as follows: 1. Surgeons called to cases of hip contusion or suspected fracture should not fail to search for evidences of injury to the delicate nervous structures here situated. 2. If such evidences of nerve injury were found, prompt and energetic measures of relief were indicated, the importance of which was emphasized by the complete and rapid recovery of the two patients who were treated early. 3. Of the four remaining patients, one was distinctly benefited and two cured by more or less long continued (one to five months) galvanic treatment. The fourth did not receive galvanic treatment, and the case was fully a year in duration.

Dr. E. E. MONTGOMERY inquired how many cells had been used in the treatment. He thought that, considering the usual obstinacy of the class to which the cases related belonged, due to the inflammation of the sheath of the nerve, the treatment had been satisfactory.

Dr. L. BREWER HALL related the details of a case similar to those described which had been caused in a lady by her falling

from a horse's back and alighting on her hips. The pelvis was fractured, and a long-continued sciatica supervened.

Dr. MASSEY, in closing the discussion, said that the number of cells used varied from twenty or thirty to fifty, the kind being the gravity cell, which, owing to great internal resistance and the nature of the elements used, did not furnish so much current from each cell as the zinc-and-carbon batteries charged with acid. The number used was largely regulated by the varying resistance of the skins of different individuals, some skins permitting a free flow of the current, while others presented an almost insurmountable obstacle. It was to be regretted that the inventors had not as yet presented us with an instrument that would conveniently inform the operators of the true amount of electricity passing at a given moment. An approximation, however, to accurate dosage might be made by including a galvanometer in the circuit, or even by observing the sensations of the patient. Since the date of these cases he had used the static form of electricity in many cases of ordinary sciatica, and found it, at times, equally efficacious with galvanism, as well as more convenient.

Peru Balsam in the Treatment of Fissured Nipples.—Dr. DEBOIS called attention to the value of this application for *fissured nipples*. The balsam should be applied about four times daily after nursing.

An Improved Clinical Microscope was presented by Dr. HALL, on behalf of the Committee on Microscopy. It combined all the features of a clinical with those of an ordinary table stand.

Miscellany.

THERAPEUTICAL NOTES.

Orthoxysulphite of Phenyl, also called sulpho-carbol, has lately been proposed by M. Laborde ("Progrès médical") as a substitute for carbolic acid. It is said not to be poisonous and to be much less odorous than carbolic acid, while it is equal to the latter as a preventive of putrefaction and fermentation.

The Bromides in the Treatment of Albuminuria.—The "Deutsche Medizinisch-Zeitung" gives a summary of an article on this subject by M. Gobillard, published in the "Union médicale du Nord-Est." That author has found that, in recent cases of albuminuria due to cold, the attack is cut short promptly by the bromide of potassium, and that the same is true of the albuminuria of diphtheria, that of scarlet fever, and even that of pregnancy, but in chronic cases, and in those associated with affections of the heart, only a transitory improvement is produced.

Permanent Pills of Permanganate of Potassium.—According to a correspondent of the "Deutsche Medizinisch-Zeitung," a Russian pharmacist has hit upon an expedient for preventing the change which the permanganate is prone to undergo when made into pills. The formula is as follows:

Vaseline.....	2 parts;
Paraffin,	
White wax, each.....	1 part;
White bole.....	3 parts.

The vaseline, the paraffin, and the wax are to be melted together, and when the mixture is cold the bole is to be added. The permanganate of potassium is to be reduced to a fine powder in another mortar, and then added to the mass. The pill-machine used should be of horn or of wood.

Salicylic Acid in the Treatment of Chanoroid.—H. von Hebra ("Wiener med. Presse"; "Centralbl. f. Chir.") recommends the application of salicylic acid to chanoroids as an abortive method of treatment. After cleansing the sore thoroughly with spiritus saponis alkalinus, and drying it, pure salicylic acid is dusted on to it, and a little cotton is laid over all, secured in place with a strip of adhesive plaster.

It is generally sufficient to change the dressing once a day, but in cases of a free discharge it should be renewed twice daily. In a case related, at the end of three days the surface of the sore had become covered with a moderately thick white crust. The use of the acid was then discontinued, and an emollient ointment was applied spread on linen. After the crust fell off, cicatrization took place in a few days. It is suggested that this treatment is likely to prove a preventive of buboes.

Uva Ursi in the Treatment of Gonorrhoea and Cystitis.—H. Paschke ("Wiener med. Presse"; "Centralbl. f. klin. Med."), having found arbutin to be of little if any service in the treatment of these affections, has had the opposite experience with a pulverulent extract of *Uva ursi*, which he gives in doses of fifteen grains several times a day, either alone or mixed with sugar of milk. It always acts promptly as a diuretic.

Beef Peptonoids.—This preparation has been made the subject of analysis by Professor Atfield, who reports that he found the following constituents in 100 parts:

Albuminoids (containing nitrogen 10.94).....	69.25
Fat.....	10.71
Sugar, including a trace of starch.....	9.50
Phosphates, equal to bone phosphate.....	3.01
Other mineral substances.....	2.61
Moisture.....	4.92

Professor Atfield adds: "The manufacturers of 'beef peptonoids' state that this food is composed of dry lean of beef, one third; the solids of milk, minus most of the fat, one third; the gluten of wheat, one third—the beef being partially digested or 'peptonized.' My analysis fully supports this statement; for I find present between 69 and 70 per cent. of albuminoids, that is, flesh-forming material (nitrogen 10.94); more than 20 per cent. of warmth-producing substance, nearly half of which is milk-sugar, and rather more than half fat; 3 per cent. of bone-forming phosphates; about 2 per cent. of other normal mineral matter, and about 5 per cent. of moisture. A sample of the constituent gluten submitted to me was practically pure, containing a mere trace of starch. Rather more than one fourth of the albuminoids, probably the 'peptonized' portion, was soluble; while practically the whole of the 'beef peptonoids' was readily soluble in peptonizing fluids, showing that it is easily and wholly digested when taken into the stomach. The flavor and odor of the preparation are excellent; its thorough state of dryness fits it for keeping any length of time in any climate. It is by far the most nutritious and concentrated food I have ever met with. Indeed, a palatable and assimilable and in every way acceptable article of food, containing nearly 70 per cent. of truly nutritive nitrogenous material partially peptonized, has never before, to my knowledge, been offered to the medical profession or to the public."

Dr. Oliver's Urinary Test-Papers.—We lately published a notice of Dr. George Oliver's little book on "Bedside Urine Testing," in which descriptions were given of handy ways of testing the urine for albumin and sugar. Our attention has recently been called to an exceedingly neat and convenient pocket-case, prepared by Messrs. Parke, Davis & Co., the manufacturing pharmacists, of Detroit, containing, within a small compass, a supply of Dr. Oliver's test-papers and specific-gravity beads, together with a graduated test-tube, a graduated drop-glass, and a little manual explaining the use of these various articles. The whole arrangement is very ingenious, and can not fail to be of great service in facilitating the examination of urine without unnecessary loss of time.

Activity in an Old Vaccine Crust.—A remarkable instance of the preservation of the activity of a vaccine crust is related in a recent issue of the "North Carolina Medical Journal." It seems that during the term of office of the Hon. Willis Alston, grandfather of Dr. Alston (as a Congressman from North Carolina from 1803 to 1826), Dr. James Smith, of Baltimore, was Director of the Vaccine Institution for the State of Maryland. He sent to Mr. Alston a package of vaccine, and it remained unopened until it fell into the hands of his grandson, Dr. Alston, in May, 1869. It was a crust imbedded in wax and inclosed in a wooden box. Dr. Alston vaccinated his servant with a part of the crust, "and in due time," he writes, "it took effect, leaving a well-defined scar."

Original Communications.

ON THE ÆTIOLOGY OF
PULMONARY PHTHISIS.*

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It is with some diffidence that I appear before an association of this character with a paper upon so hackneyed and, as some may think, so sterile a subject as the ætiology of phthisis pulmonalis; and more particularly so as I have no new facts to offer.

I am not even prepared to discuss, on the basis of my own knowledge, the latest and most important discovery in the pathology of this disease, viz., that of the *Bacillus tuberculosis*. The discovery by Koch of what appeared to be the specific germ of tubercular disease has put the pathology of the subject upon a new basis, and completely changed the drift of discussion. It has, it seems to me, so completely absorbed the attention of the medical world that other and important matters are in danger of being entirely lost sight of. Yet there are many important factors in the pathology of phthisis besides the *Bacillus tuberculosis*.

Granting, as it appears we must, that the immediate exciting cause of miliary tubercles is the invasion of the body by these organisms, we have still to consider what are the conditions which precede this invasion and render the tissues susceptible to it. The importance of examining carefully into the question of predisposition is evident, inasmuch as the seed can not ripen and bring forth its harvest of death unless it falls upon a soil favorable to its development.

On the other hand, the exciting cause of tuberculosis—being ever present and unavoidable, except, perhaps, in some few favored localities—has as yet mainly a scientific interest; though we may hope that in the future we may be able to oppose its inroads more successfully than at present.

In studying the conditions which may be antecedent to, and prepare the way for, the development of phthisis pulmonalis, it will be convenient to adopt some form of classification. They may be arranged as follows:

1. Those conditions which are found in the bodies of ordinary healthy people.

2. Abnormalities of anatomical structure. These are either the result of direct inheritance, or proceed from disturbance of health in the parents.

3. Conditions arising from imperfect development of the body after birth.

4. Acquired disease in the lymphatic glands or connective tissues leading to the formation of caseous foci. These are causes of tuberculosis proper.

5. Acquired diseases in the lungs leading to the formation of caseous matter or collections of decomposing pus.

6. Such conditions of life as favor the occurrence of struma and caseous pneumonias.

It may be allowed, though there is as yet no proof of it, that, by direct inoculation, a healthy human being may be rendered tuberculous. But I think it fair to assume that, in the vast majority of cases, some or many of the predisposing causes mentioned are in existence prior to the advent of active tubercularization.

The conditions which are found in the bodies of ordinary healthy individuals, and which favor, indirectly of course, the occurrence of this disease, exist in the structure of the lungs and thoracic walls.

In studying the anatomy of the lung, we find that the respiratory mucous membrane undergoes important modifications as it passes from the bronchial tubes into the bronchioles and alveolar structures. When the caliber of the tubes is reduced to a certain diameter, the mucous glands disappear, and the tenuous walls are lined by a single layer of epithelium.

In the alveolar passages, infundibula, and vesicles, the epithelium, which was columnar in form during fetal life, becomes flattened when respiratory dilatation is established, and forms a single layer of flat cells, lying directly upon the vessels and connective tissue of the alveolar septa, with no submucous layer and no mucous glands.

It is true that the epithelial cells have everywhere a glandular action, and separate something from the blood. But in this case the activity of the cells is in the direction of the excretion of gases, aqueous vapor, and, probably, certain effete organic substances from the blood in the pulmonary capillaries. It can not be said that mucus is secreted below the line at which the mucous glands cease to exist.

The physiology of respiration teaches us that the air contained in the bronchioles and alveoli is never bodily changed except when collapse and subsequent rehabilitation occur. In other words, these small cavities never contract sufficiently to entirely expel their contents. Nor can any act of coughing or other effort cause them to do this; so that, if any substances accumulate in them, they must either be liquefied and reabsorbed, or, if some moisture exists to favor movement, they may be slowly expelled piecemeal; or, should neither of these occur, they will remain, and either undergo some form of decomposition, usually the caseous metamorphosis, or organize into a new tissue. The absence of mucous glands to supply moisture and the obstacles to the expulsion of dry substances from the alveoli thus appear to be two very important conditions, resident in the normal structure of the lung, and indirectly favoring the establishment of caseous foci.

Besides these, there are certain circumstances affecting both the sanguineous and aerial circulation in the *apices*, and favoring the location of disease there.

The thorax is so constructed that the muscles of inspiration, acting upon both sides simultaneously, reduce the internal pressure upon all sides; for, while the muscles do not act directly upon the extreme apices, where the pleuræ project through the superior opening of the thorax, nor

* Read before the American Climatological Association, May 3, 1884.

upon the mediastinal surfaces, still, the cavity being a closed one, any change in pressure not too rapidly induced will be felt equally in all its parts.*

In this way the apices and mediastinal regions will expand equally with the other portions of the lung, and the air will be invited into them. During expiration, however, the conditions are different. The thoracic walls, which have been expanded by the traction of the inspiratory muscles, return to the expiratory position through the agency of three factors—viz., the elastic contractility of the lungs, the resilience of the chest-walls, and the upward pressure of the abdominal contents. It will be seen that only one of these forces—viz., the elasticity of the lungs—acts upon the extreme apex. In this locality the cavity is closed in by a strong fascia, attached to the scapuli and first rib. During inspiration, this fascia, if moved at all, must descend. In forcible inspiration, its *relative* descent is well marked.† During *expiration*, it either remains stationary, or ascends. With a forcible expiration, as in coughing, its ascent is considerable. It results from this that, while the other portions of the lung have three forces acting to favor the expulsion of air from the alveoli, in the apices there is no other force than the contractility of the lung itself, and this is somewhat counteracted by the ascent, or tendency to ascend, of the cervical fascia.

The ordinary conditions, then, are not favorable to the free ventilation of the apex. The pulmonary circulation can not be perfectly performed, save in the presence of free movements of expansion and contraction, and the circulation in the apex, where these are diminished, is, consequently, not so free as in the other portions of the lung. In addition to this, the force of gravity tends to diminish the amount of fluid in the apex. It is the constant observation of pathological anatomists that the apices are the dry and anæmic portions of the lungs. They are the ill-nourished portions. If, now, owing to an inherited peculiarity of structure, to vices of general nutrition, or to old age, the movements of the upper portion of the chest are still further restricted, or, what is more important, if the contractility of the lung is diminished, both air and blood will have but a feeble circulation, and should any other cause, as a chill, intervene, to determine the flow of blood to the lungs, the vascular paresis will be felt most at the weak apices, and the tendency to effusion will be the greatest there. But the inflammation will not be a sthenic, croupous one, as it is when the hyperæmia is more active. Venous engorgement will be in the ascendant, the hepatization slow in appearing and disappearing, and the infiltration and cell-accumulation in the connective tissue predominant.

Another element of importance in the effect of the normal structure of the body upon the tendency to phthisis is the effect of the expiratory muscles upon the thorax in the act of coughing. This can only be operative in cases in which disease has already started in the apex.

The muscles of expiration act mainly upon the lower

portion of the chest.* In the sudden and violent expiratory efforts of coughing, the lower and middle portions of the lungs are, as it were, violently compressed. The effect of this compression is, I believe, to force the air upward toward the trachea, with such power and in such volume that it can not find an immediate exit, but a portion of it will be driven into the bronchi of the upper lobe, in which the current will be reversed, the air returning toward the alveoli. Should the cause of the cough be an ordinary bronchitis, the result will be an emphysematous dilatation of the alveoli of the upper lobes, either temporary or permanent, according to the duration, etc., of the bronchitis.† If the cough results from a catarrhal process at the apex, it will be readily seen that this reversal of the current of air will tend to force the morbid products back into the air-sacs, and favor their retention and caseation. While fluids gravitate from the apex toward the base, dry residues and collections of cells, always difficult of expulsion from any portion of the alveolar structure, are retained here with especial tenacity. The influence of these normal peculiarities of structure in favoring the location of phthisical processes in the extreme apices of the lungs is of immense importance, and should never be lost sight of in discussing the pathology of consumption.

Abnormalities of anatomical structure are of very great ætiological importance, as to them is due the constitutional predisposition of those unfortunate persons who, by direct inheritance of similar peculiarities from their parents, or as a result of the operation of impaired conditions of life upon the latter, have come into the world with a tendency to pulmonary phthisis. Besides *anatomical*, I might have mentioned *physiological* peculiarities; but, without lingering over the question of the interdependence of structure and function, we may assume that the two go together, and that mention of the one implies the presence of the other. The most evident deviations from the normal standard are to be noted in the general structure and external appearance of the body. Certain subjects present the well-known appearance of the phthisical habit. Aretæus is quoted by Laennec‡ as drawing the following picture: "Extreme whiteness of the skin, bright-red color of the malar eminences, narrowness of the chest, whence arises the wing-like form of the scapulae, and the slenderness of the limbs and of the body, although such individuals have a certain degree of adipose and *embonpoint*."

This, as Laennec justly observes, indicates, particularly, the appearance of the hæmoptysical. The long thorax, with sharp epigastric angle and small muscles, is known to all clinical observers as of bad omen in regard to the impending development of phthisis. So also are the subjects of scrofulous habit recognizable by signs which it is not necessary to enumerate here. All these appearances indicate abnormalities of anatomical structure, favoring, more or less directly, the occurrence of phthisis. But, of late years, a new field of anatomical study has been opened by Pro-

* For a careful study of this subject of intra-thoracic pressure, see

Dr. Garland's work on "Pneumono-Dynamics."

† See Dr. Forbes, "Am. Jour. of the Med. Sci."

* Vide "Lectures on Cough," etc.

† The author does not mean to be understood as affirming that this is the sole cause of emphysema.

‡ Laennec, "Treatise of Mediate Auscultation," etc., p. 312.

fessor Beneke, of Marburg.* This is no less than the collection of data for the determination of the question whether the peculiarities and anomalies of constitution are not dependent upon differences in size, weight, etc., of the internal organs. Already the study of anthropometry had, in the hands of Quetelet, Roberts, Bowditch, and others, given interesting and valuable results, so far as the external anatomy was concerned; but Beneke and Thoma,† taking their hint perhaps from Virchow's observations on the arterial system in chlorosis, have made extensive series of measurements and weighings, in order to establish the anatomical basis of individual differences and anomalies. As Beneke observes: "We can not comprehend the working of the human machine as a whole unless we possess a knowledge of the absolute and relative proportions of all the separate parts of it. . . . There can be no doubt that an organism with a large heart, capacious arteries, small lungs, and large liver, will work out an entirely different result from one of the same age with small heart, narrow arteries, large lungs, and small liver." The result of his observations in regard to phthisis, up to 1881, appears to be that the ordinary phthisical subjects with caseous pneumonias are distinguished by the possession of relatively small hearts, narrow arteries, large lungs, small livers, and short alimentary canals.

Thoma's observations, which have been conducted on a very extensive scale, and are concerned to a greater extent with the establishment of averages for normal structure, on the calculus of probabilities, show, in the field of pathology, a somewhat similar result.

The labors of these anatomists, while still too limited to give us accurate results, point, undoubtedly, to an anatomical structure, either directly transmitted or else inherited, as a result of unfavorable conditions of life on the part of the parents, underlying and standing in a causal relation to the phenomena of special constitutional diseases.

The conditions arising from imperfect development of the body after birth, and which render the subject vulnerable to the tubercular infection, or favor the development of the caseation which immediately precedes it, are numerous and difficult of classification. They are, in the first place, a state of low vitality. By this I mean a state in which the volume of blood is diminished, the body dwarfed in one way or another, the chylipoëtic system feeble in its functions, and the nervous system ill nourished and inadequate to the ordinary duties of life. The circulation and respiratory movements are weak, the intellect, though sometimes bright, of a low order, and the capacity for work limited. The lungs are poorly nourished, poorly ventilated, and liable to the catarrhal and interstitial forms of inflammation. Again, we meet with the scrofulous diathesis. This, though often inherited, is frequently acquired as a result of exposure to various devitalizing influences. I will not take up the time

of the Association with a discussion of the pathology of this protean disease, but simply allude to it as one of the dyscrasias which favor the formation of cheesy deposits and the diminished vital activity which invites the invasion of parasitic diseases. The exanthematous fevers seem to predispose to phthisis, through their tendency to inaugurate the strumous diathesis. Typhoid fever presents some curious analogies to tuberculosis, or else some cases have been confounded by those who have observed them. An interesting collection of such cases has been made by Dr. Creighton in his work on "Bovine Tuberculosis in Man." They are, at least, a most interesting pathological study.

During youth and in adult life numerous circumstances occur which either directly deprive the body of sufficient nourishment, cause an excess of consumption over alimentation, or induce diseases which interfere with primary or secondary assimilation. These circumstances, sometimes obscure, sometimes impossible of detection, lead to a condition of inanition or wasting of the body which does not, I believe, render it specifically liable to *tuberculosis*, but favors the occurrence of adynamic catarrhs, asthenic pneumonias, and other chronic inflammations. This wasting of the body, precedent to the active manifestations of phthisis, has attracted the notice of pathologists and clinical observers from the earliest times, and, owing to the obscurity of its origin, has been considered a part or stage of pulmonary consumption. There has been much speculation as to the nature of this profound disturbance of nutrition, and many are the theories in regard to it which have vexed the medical mind. Dr. Horace Dobell, in his work on "The True First Stage of Consumption," in 1867, and "On Loss of Weight, Blood-spitting, and Lung Disease," in 1879, has given this subject a most thorough and able discussion, bringing to bear upon the question many original ideas and observations. Dr. Dobell thinks that this wasting or inanition of the body prior to the development of pulmonary phthisis should be considered the first stage of the disease, though he admits the specific nature of the tubercular virus. It is, undoubtedly, the first link in the long chain of morbid physiological actions which has its beginning in a state of almost perfect health and its end in the total disintegration of the body; and the subject can not be properly discussed without admitting this as a very important element in many cases. On the other hand, in many cases the signs of pulmonary disease appear before any perceptible loss of weight is observed. The idea of Dobell and others, that pancreatic inefficiency is at the bottom of the mischief, is one which we can scarcely accept. The pancreas is an organ with the pathology of which, beyond the occurrence of certain inflammations and tumors, we are not well acquainted. My own impression is that, like the other salivary glands, its diseases are few and simple. We know, however, that in debilitated states, as anemia, nervous depression, and imperfect oxygenation, the digestive fluids are not normal in quantity or quality.

There is a condition of atonic dyspepsia. The food substances introduced into the stomach and not properly digested undergo decomposition, with the formation of fatty and other organic acids and products of the disintegration

* F. W. Beneke, "Die anatomischen Grundlagen der Constitutionen-anomalien," Marburg, 1876; "Constitution u. constitutionelles Krank-sein des Menschen," Marburg, 1881.

† R. Thoma, "Untersuchungen über die Grösse und das Gewicht der anatomischen Bestandtheile des menschlichen Körpers im gesunden u. im kranken Zustande," Leipzig, 1882.

of albuminoid compounds. These irritant bodies, by their action upon the digestive mucous membrane, engender a catarrh which still further interferes with the primary assimilation. In some instances where, as far as we can see, loss of weight continues in spite of the fact that the patient takes the usual quantity of food and digests it, there is probably a fault in the original construction of the body, such as is spoken of by Professor Benéke as existing in the bodies of the victims of caseous pneumonic phthisis, viz.: "A relatively small heart, a relatively narrow arterial vascular system, relatively large lungs, a relatively small liver, a relatively short small intestine."* This lack of equilibrium between the nutritive and respiratory systems would seem *a priori* sufficient to account for much of the wasting that is observed in these persons. The statement of Rokitsansky, quoted by Dr. Dobell, and, as the latter says, confirmed by Dr. C. Meymott Tidy,† that the blood in phthisis is in a state of hyperoxidation, is worthy of further investigation. The further circumstance that phthisical patients, in spite of the pulmonary implication, are not usually cyanotic, is of cognate importance. But, in whatever way the details of this pathology of nutrition may be settled, Dr. Dobell has certainly done a great service to the profession and to humanity by his recognition of the importance of the digestive inefficiency in phthisical persons, and by devising means for remedying the defect. The importance of looking after the primary assimilation in those who are suffering from inanition, either with or without phthisical complication, has been very strikingly illustrated by the experiments of Dr. Debove and others in super- and artificial alimentation.‡ The results of Debove, whose main reliance is on pulverized lean meat, compared with those of Dobell and others, if they prove anything, show that it is not a lack of any one alimentary principle that needs to be supplied in these cases, but that the need is for very easily digestible and assimilable foods, irrespective of the exact proportion of hydrocarbonaceous, albuminous, or other ingredients. The advocates of cod-liver oil and fats have, in their enthusiasm, overlooked the fact that the wasting in inanition, and particularly in phthisis, involves the muscles as well as the adipose tissue. It involves almost everything, the wasting process, however, showing itself variously in different organs. The liver, notably, shows its lack of nutrition in a molecular disintegration of its cells with the local production of fat.

The importance of this defective nutrition as a predisposing cause of phthisis can not be exaggerated. Though recognized long ago, and insisted upon, particularly by Dr. J. H. Bennet,* it is receiving more attention now than formerly, and better practical results have been obtained since our knowledge of the physiology of digestion has been turned to account in its treatment.

* "Constitution u. constitutionelles Kranksein," p. 47.

† Dobell, "Loss of Weight, Blood-spitting," etc., p. 148.

‡ A very interesting account of Dr. Debove's methods and results may be found in the "N. Y. Medical Journal," April 19, 1884, p. 429, by Dr. H. B. Millard.

* J. H. Bennet, Reynolds's "System of Medicine," vol. iii, p. 546, 1871: "On Pulmonary Consumption."

It will not be out of place to refer particularly to the general constitutional weakness that results from long confinement in-doors. Whether this depression is a result of the continual action of the "gloomy passions," as was thought by Laennec* to be the case with those who spend their lives in conventual seclusion, or whether it is not rather induced by lack of sunlight, ventilation, and the varying sense impressions of ordinary life, needs little discussion. That the mortality from phthisis among cloistered orders is very high is, I believe, true. These instances are only of scientific interest, inasmuch as prophylaxis is impossible.

The fourth class of pathological conditions that predispose to the development of phthisis, or, as we may now say, render the body susceptible to tubercular infection, are acquired diseases in the lymphatic glands or connective tissues, leading to the formation of caseous foci. These causes would give rise to the true tubercular variety of the disease.

This class requires little more than a simple notice, inasmuch as it is generally admitted that caseous collections, whether in the lymphatic glands, connective tissue, bones, joints, or elsewhere, are frequently followed by miliary tuberculosis; and that the latter is so seldom found, save in bodies where such caseous deposits also exist, that the former must be regarded as its direct or indirect cause.

Acquired disease in the lungs, leading to the formation of caseous matter, or collections of decomposing pus, is, of all causes, the most important in the etiology of phthisis pulmonalis. This statement will immediately raise the question whether I am not confusing the disease itself with a cause of the disease; and, further, admitting the anatomical distinction between caseous pneumonias and miliary tuberculosis, are they not but different forms of the same disease? There has been so much theorizing and hair-splitting in the discussion of these questions that it is with great timidity that I approach them. But, if the Association will bear with me for a few moments, I will endeavor to keep out of the deepest part of the mire and wade through as rapidly as possible. In the first place, I think that we should make a clear distinction between the simple occurrence of a pulmonary inflammation, leading to localized cheesy metamorphosis, and the general collection of morbid conditions which go to make up a case of what we all immediately recognize as pulmonary consumption. One is a local process, more or less extensive, which may become latent and never give rise to further trouble, or may even undergo resolution; the other is a constitutional dyscrasia, involving the most profound nutritive changes in the body at large, and can seldom give a better result than by having its course somewhat prolonged. I would not by this be understood as holding the doctrine that phthisis pulmonalis is a specific disease, analogous to the zymoses. There is, to my mind, no evidence of its specificity prior to the development of miliary tuberculosis. It may be proved hereafter that caseous metamorphosis is the result of specific infection, but I think it is not proved as yet. The doctrine of Virchow and Niemeyer, that caseous pneumonia and miliary tuberculosis are two different things, is not, so far

* *Loc. cit.*, p. 310.

as I can judge, overturned by the immortal discovery of Koch. What, then, is phthisis pulmonalis? Phthisis pulmonalis is a chronic, wasting disease of varying etiology and pathology, whose essential anatomical lesion is a destructive process in the lungs, and whose most prominent symptoms are emaciation, cough, hæmoptysis, fever, and colliquative discharges. The important points in the etiology are, first, conditions which affect the general nutrition of the body in such a way as to give a weak nutritive power and to disturb the proper equilibrium between the physiological actions of its different organs; second, inflammations of the pulmonary texture which lead to its destruction. In order to make my meaning clear, I may refer to our ordinary colloquial expressions. If we examine a patient who is emaciated, coughs, and perhaps has had hæmoptysis, but find no evidence of disease in the apices, we say "he is on the verge of phthisis"; he may recover, but he will probably go into consumption. What we mean is that the clinical picture is not yet complete, that one or more of the essential conditions are lacking, and the distinction is recognized as such an important one that we base our prognosis upon it. Another patient may give evidence of slight disease at the apex, but without marked emaciation or without fever, and we say the same thing—"He is in great danger of having phthisis." Such a patient may never develop the rest of the lesions. He may recover. Of course, some signs are more highly diagnostic than others—*e. g.*, hæmoptysis is more so than cough; night-sweats more so than emaciation; a peculiar appearance of the larynx more so than bronchitis. The apical catarrh and fever are the most important of all, but still they are only a part of the disease. And in this, as in other diseases, there may be great individual variations. This has undoubtedly been the cause of much of the confusion of thought that has existed in regard to the true nature of phthisis pulmonalis. It originated when diseases were regarded as entities, and before the advent of modern pathological physiology.

Tuberculosis is also a part of the vast majority of cases of phthisis, but is generally one of the late occurrences, hastening the fatal termination. In some cases it is an early phenomenon, and may, indeed, play the leading rôle in the morbid processes in the lung. It can not, however, in the great majority of cases, be called a cause of phthisis, inasmuch as it does not appear till after the disease is well established. Acute tuberculosis should be classed by itself among the specific infectious diseases.

Before leaving this part of my subject I wish to say that, in these remarks upon the definition and pathological character of phthisis pulmonalis, I have simply given what seems to me to be the state of the case at present. I am not advocating any pet theory, as I have none.

The inflammations referred to as leading to caseation and the accumulation of decomposing pus are chronic bronchitis and peribronchitis, resulting in bronchiectasis; chronic catarrhal or desquamative pneumonia; and acute pneumonia, in which the products of the inflammatory stage are of such a character, or so located, that reabsorption and expectoration can not occur. It is affirmed by some, particularly by Dr. Leaning, of New York, that pleuritic inflammations

are, by extension into the connective tissue of the lung, a frequent indirect cause of caseous metamorphosis. While I believe that the doctor overestimates the frequency of this occurrence, I am far from denying its possibility. It may be possible, also, though I know of no evidence bearing directly upon the question, that the retention and decomposition of pus in the ventricles of the larynx may afford a supply of irritative material which, being inhaled into the deeper passages, can set up chronic bronchitis, peribronchitis, and pneumonic processes.

It is not within the scope of this paper to discuss the pathological histology of the lesions referred to above, but a few observations may be allowed in explanation of the statements made. In regard to the chronic bronchitides and pneumonias further remark is unnecessary. The acute pneumonias, however, require a little further discussion, as there has been much contention in regard to their ætiological relations.

That acute pneumonia does occasionally terminate in phthisis pulmonalis will be granted by every clinical observer. When, however, we inquire whether this sequel is only observed in cases of catarrhal pneumonia, or whether it does not also follow the croupous form, we meet with conflicting views. The difficulty lies in distinguishing, ante mortem, between croupous and catarrhal pneumonia. Cases of catarrhal or desquamative pneumonia are occasionally met with which can not be diagnosed except by their subsequent history, or by post-mortem investigation. If any one should maintain, as Buhl* does, that the cases which terminate in this manner are all cases of desquamative pneumonia, it would be very hard to disprove it. The immense pathological and clinical experience of this observer entitles his opinions to the very greatest respect. And, indeed, it would appear, *a priori*, that the great majority of cases in which acute pneumonia terminates in phthisis are really instances of catarrhal, and not of croupous, inflammation. If we bear in mind that the catarrhal pneumonias are the adynamic pneumonias; that a more or less cachectic condition is necessary to the occurrence of caseation, at least to any extent; that the increased proliferation of epithelium and collection of cells in the alveolar septa are the conditions necessary to caseation; and that these do not occur in croupous pneumonia—we have already good reason for doubting the liability of the latter disease to eventuate in the lesions of phthisis. But when we remember the additional fact that post-mortem examinations show that croupous pneumonia occurs mainly in robust people, or in those devoid of any evidences of a cachectic state, while the catarrhal or desquamative type shows itself in those who are of weak and infirm constitution, the strength of Buhl's position appears still greater. Owing to the essential differences between the histology of phthisical lungs and of those affected by the croupous pneumonic process, it must be admitted that, supposing that a croupous pneumonia eventuates in a phthisical lesion, it must, in the transition, have altered its characters and assumed those of the desquamative form. The practical

* Buhl, "Mittheilungen aus der pathologischen Institute zu München."

lesson to be derived from these observations is that, inasmuch as it is not possible in all cases, during their early stages, to diagnose croupous from desquamative pneumonia, the latter stages of this disease should always be most carefully watched, with a view to counteracting any tendency to chronicity. It is especially important to repeat the physical exploration of the chest from time to time, so as to keep track of what is going on in the lung; for, in cases of chronic pneumonia, the general appearance of the patient will sometimes improve, and he may express himself as feeling quite well, when an examination of the chest shows that solidification of the lung is still present. I have seen patients who, several weeks after the beginning of a pneumonia, had marked dullness upon percussion, with bronchial breathing and bronchophony over the affected area, although they expressed themselves as feeling as well as ever, and, to superficial observation, appeared so.

This study of the predisposing causes of phthisis would be incomplete without some more particular reference to those conditions of life which have been alluded to as favoring the occurrence of struma and caseous pneumonias. They are the conditions which it is one of the main objects of this Association to investigate. If the true relationship of phthisis to scrofula were more clearly ascertained, an important advance would have been made in the study of our subject. It seems, however, that the conditions which favor scrofulosis also favor the development of phthisis. In the present state of geographical pathology it is difficult to make any positive statements, but we may say that, as a general rule, the two diseases go hand in hand. But to this there are some notable exceptions. For instance, in Sweden and Norway, where phthisis is rare, scrofula is said to be exceedingly common,* though in Iceland and the Faroe Islands the former† is almost unknown and the latter rare. In the elevated regions of South America, again, where phthisis is very uncommon, scrofula is said to prevail extensively.‡ The meaning of these facts, if they are facts, is not apparent. We should bear in mind that the observations collected by writers are made by men of varying qualifications; that some have different ideas of pathology from those entertained by others; and that, in the absence of post-mortem records, made by reliable anatomists, much confusion may arise.

It should also be remembered that many of the recorded observations are made by travelers whose only or chief source of information is the accounts obtained from those with whom they come in contact. It is true, however, that many of the conditions which would favor the increase of scrofula also favor the development of phthisis. Residence in damp and gloomy places, where excess of moisture and lack of sunlight combine to interfere with the normal physiology of the body, is a prolific source of the disease. Bad food, particularly such as taxes the digestive power without furnishing a full proportion of the stimulating nitrogenous elements, particularly if combined with the former circum-

stances, should be considered as a formidable enemy to the proper nutrition of the body. A. Vogel* doubts the ability of these causes to produce the tuberculous diathesis except in those who are constitutionally predisposed to it.

That overwork, particularly where it is carried on indoors and on a poor diet, is a very frequent cause of phthisis pulmonalis, will, I think, be admitted by any one who has had practical experience in our large cities. The difference in health between domestics who are actively employed in well-appointed households and factory girls confined all day in one position, almost, in close, dusty rooms, is so noticeable as to attract the attention of the most careless observer.

This, however, may be partially due to other causes. All kinds of dissipation may be reckoned as causes of this disease, unless, it may be, excessive, continual drinking by those who are not overworked and who are liberally fed. Such persons tend to excessive development of adipose tissue and blood, and to diseases of the abdominal viscera. If they die of pulmonary disease, it is usually of acute pneumonia. A frequent cause, which is particularly observable in the present age, when great masses of population are shifting their homes and passing from one country to another, where they meet with entirely new conditions, is the change of vital operations caused by such a transition. It is a matter of common observation, in our large eastern cities at least, that large numbers of the emigrants, but more particularly the children of emigrants, fall victims to this terrible malady. In my own observation, they have been mainly the children of Irish parents, born upon American soil; but it may be true of other nationalities. The Irish emigrants are more prone to remain in New York and Brooklyn than those of other nationalities are, so that we have a better opportunity to watch them. I have been told by my friend Dr. Newton, of Rutland County, Vermont, that the same holds true among the Welsh quarrymen, who are employed in the slate and marble industries of that State. The explanation of this peculiar tendency in the children of emigrants is, probably, to be explained by a comparison of the conditions of nutrition and respiration existing in the parent country with those prevalent here. An organism whose structure is, by heredity, adjusted to the climatic and dietetic conditions of the British Isles, and particularly to the farinaceous and fatty food of the Irish peasantry, is not calculated to maintain its vital equilibrium under the altered circumstances by which it is invested in the New World. While the fully developed adult may succeed in accommodating himself to it, it is not so easy for an infant to develop healthily under circumstances so entirely different from those under which its ancestors have lived for centuries. These great ethnic changes were appreciated, years ago, by Dr. Daniel Drake, who even prophesied that some pathological phenomena would result from them.† Another and equally important observation, if it is correct, is that the inhabitants of the Antilles and of the Polynesian

* A. Hirsch, "Handbuch der historisch-geographische Pathologie," Stuttgart, 1883, 2te Abth., p. 433.

† Lombard, "Traité de climatologie médicale," t. ii, p. 49.

‡ A. Hirsch, *op. cit.*, Abth. ii, p. 438.

* "Diseases of Children," translated and edited by H. Raphael, M. D., New York, D. Appleton & Co., 1873, p. 539.

† Daniel Drake, M. D., "On the Principal Diseases of the Interior Valley of North America," Cincinnati, 1850, p. 648.

Islands were free from phthisis before the advent of civilization among them. Though the evidence seems strong, we are almost inclined to doubt it; but, if it is true, it may indicate either one of two things. Since the specific infection of tuberculosis has been discovered, it may be asserted that the European settlers introduced the virus among the aborigines of the newly discovered countries. Or it may be said that the change in their mode of life has affected them very much as emigration would. "The transition from a nomadic or savage life to civilization," says Lombard, "is one of the most favorable circumstances for the development of phthisis."*

In regard to the special influence of climate upon the tendency to phthisis I will say but little, as others are to give it a more thorough treatment than is possible in such an essay as the present. What the essential element is which gives immunity it is difficult to determine, except in a general way. That elevation is very important there can be no doubt. It is generally admitted that elevated and dry regions are more or less exempt from the disease. Equability is certainly favorable to the longevity of those almost affected. Temperature is of less importance. But, while admitting this much, we must not forget that some low countries are free from it. It is said not to exist among the Kirghiz tribes who inhabit a region which lies below the level of the sea. It is also not found in some countries the climate of which is very changeable, as Iceland, the Faroe Islands, and some of the Hebrides.

Why it is that moist localities in New England should be infested by it while the islands referred to are almost, if not entirely, free from it, is worthy of investigation. Stress should be laid upon the fact that Iceland is of volcanic formation. Very slight vegetation is found upon it, and in the valleys, where there is more or less swamp, the ground, even in summer, is frozen a short distance below the surface. Then the inhabitants live largely upon a diet of animal food,† It is essentially a marine climate, and that is not unfavorable in its influence upon phthisis.

It is stated by Laennec‡ that in France phthisis is far less frequent upon the coast than in the interior. Probably the immunity of these people is due to the marine climate, absence of miasmatic emanations from the soil, and their animal diet. It would seem to throw some doubt upon the importance of moisture, simply as moisture, as an ætiological factor. This very short and imperfect reference to the climatic influences may serve one useful purpose. A careful scrutiny of the facts presented and alluded to will, it seems to me, lead us still farther toward the recognition of the importance of errors of general nutrition as ætiological factors in the history of pulmonary consumption.

As the fundamental sciences of anatomy and physiology, both normal and pathological, are more fully investigated, new light will be thrown upon this subject, and it is to be hoped that, at no distant day, our knowledge may lead to the solution of many of the problems which now baffle our most determined efforts.

* Lombard, *op. cit.*, t. iv, p. 422.

† The herbivorous animals are most easily inoculated.

‡ Laennec, *op. cit.*

A CASE OF PARALYSIS OF THE LEFT VOCAL BAND

IN EXTREME ABDUCTION,
FOLLOWING AN INCISED WOUND IN THE NECK.*

By J. SOLIS-COHEN, M. D.,
PHILADELPHIA.

THE unique case here reported appeared at the Laryngoscopic Department of Jefferson Medical College Hospital in November, 1883, and was brought to my attention by Dr. Louis Jurist, one of the chiefs of clinic in that department. Shortly thereafter the patient became an inmate of the State Hospital for the Insane at Norristown, Pa., at which institution my friend Dr. Chase, the superintendent, has kindly afforded me every opportunity for examining this interesting larynx.

A. L., aged thirty-three, a drug clerk of Bohemian proclivities, and a slave to morphine, states that, while under the influence of liquor, on a lonely road a few miles from Omaha, in June, 1883, he was attacked by thieves, who threw him down and cut his throat. Within less than half a minute after being cut, and in the very act of crying for help, his voice gave out. The aphonia has been permanent.

Upon laryngoscopic inspection, the left vocal band is seen fixed in extreme abduction. The movements of the right band are normal in inspiration (Fig. 1) and expiration (Fig. 2), and



FIG. 1.—In forced inspiration.



FIG. 2.—In expiration.

that band passes the median line on attempted phonation (Fig. 3), as shown in the excellent drawings made for me by Mr. Max Stern, of Philadelphia, an undergraduate of Jefferson Medical College.

In forced inspiration the right vocal band recedes toward the side of the larynx, but no farther back than the fixed position of the left band, the shape of the glottis, indeed, apparently indicating that the voluntary abduction on the uninjured side is not quite so great as the permanent abduction on the impaired side (see Fig. 1). In strong attempts at phonation, not only does the right vocal band pass beyond the middle line, but the



FIG. 3.—In attempted phonation.

force of the expiratory blast of air throws the middle portion of the paralyzed vocal band upward (see Fig. 3), and sets it into

* Read before the American Laryngological Association, May 12, 1884.

a mechanical vibration, which yields a rough tone, but a tone in no wise phonic in the true vocal sense of that term.

It is a matter of regret to me that several of the members of the Association who have passed through Philadelphia did not avail themselves of an opportunity tendered them of examining this interesting case, inasmuch as it has not been feasible for me to have the patient brought here for inspection.

The paralysis seems due to lesion of the pneumogastric nerve in the wound of the neck, which, as may be seen from the plaster cast herewith presented, has been quite an extensive one. The sterno-cleido-mastoid muscle has been severed, and there is no trace of pulsation along the course of the carotid artery, or in its vicinity. The patient declares that the carotid artery was tied by the surgeon called to his assistance, but I have been unable, in a correspondence instituted for the purpose, to find any surgeon, in the neighborhood where the lesion is said to have occurred, who has any cognizance of the case. The statements of the patient are not to be relied on, and the injury probably took place in some other locality.

The incised wound in the neck, declared to have been homicidal, was evidently suicidal, as can be recognized in the cast before us. It resembles in its configuration the usual suicidal wound as I have seen it in a number of unquestionable cases.

The knife was evidently applied from behind forward. Starting quite superficially, the cut soon became quite deep, reaching its greatest depth in the carotid region, and then, becoming gradually more superficial, barely penetrated the skin for the last inch of its course. Described from before backward, the cicatrix extends anteriorly a little to the right side of the thyroid cartilage, about half an inch above the crico-thyroid membrane, crosses the larynx horizontally, and then traverses the entire left side of the neck, dropping an inch and a half in its course to a point behind the posterior margin of the sterno-cleido-mastoid muscle. The whole cicatrix is four inches and a half in length, and about one inch in width at its broadest portion. It is broadest in the region just posterior to the normal posterior margin of the divided and retracted sterno-cleido-mastoid muscle, where it has a gashed appearance, as though several cuts had preceded the main one. Two inches below the mastoid process of the temporal bone is a marked protuberance formed by the retracted upper segment of the sterno-cleido-mastoid muscle.

DISCUSSION.

Dr. KNIGHT—I think we ought to take evidence of this kind with much care. Why could not this have been a case of injury simply of one of the adductors? Why is it necessary to suppose that a portion of the nerve had been injured? It seems to me almost impossible, in the absence of a post-mortem examination, to gain much positive information from this case. There are so many disturbing elements in studying the question of the function of the recurrent laryngeal nerve that it is difficult to draw positive conclusions from cases of this kind.

Dr. LEFFERTS.—It needs, Mr. President, a very expert eye to diagnose between extreme abduction and cadaveric position of the vocal cord, which also would have taken place had the recurrent nerve been severed. Of course, I accept willingly the

testimony of an expert like Dr. Cohen, but, as stated, it is very difficult to differentiate between extreme abduction, the condition which Dr. Cohen describes in his case, and the cadaveric position. I once reported the case of a woman whose larynx was wounded by a pair of shears in the hands of her husband. The right recurrent laryngeal nerve was evidently severed. She endeavored to call out at the time of the injury, but found herself practically voiceless. At first the aphonia was nearly absolute, and remained in less marked degree ever afterward.

Examination of the larynx showed the cord in the cadaveric position, although the question was raised whether it was not simply in a state of abduction. It seems to me that the case was similar to the one under Dr. Cohen's observation.

Dr. SEILER.—I do not think that the cadaveric position necessarily follows section of the recurrent laryngeal nerve. Experiments upon a criminal, made years ago by Weir Mitchell and another gentleman, demonstrated that when one nerve was cut there was paralysis, but not complete, of the muscle of the same side.

The PRESIDENT.—I have never been able to understand how, in a case of complete severance of the pneumogastric nerve, or of that portion of it supplying the larynx, the muscles supplied by it could retain any degree of power. With regard to the question of diagnosis between extreme abduction and laryngeal paralysis, of some fifty or sixty cases of laryngeal paralysis which have come under my observation, in all there has been retention of voice. In only one or two cases was there at first a change of the voice to the falsetto, and that in time disappeared. I should suppose that in extreme abduction there would be complete loss of the voice.

Dr. COHEN, in closing the discussion, said: It is all important, in judging of the case under discussion, to see the patient, and I therefore regret very much that the gentlemen did not accept my invitation, when passing through Philadelphia, to visit the asylum where the patient is confined. There certainly could have been no direct injury to the recurrent laryngeal nerve; if any of the nerve-fibers supplying the larynx have been cut, it must have been before their departure from the pneumogastric. If, as we know, the adductor fibers of the nerve supplying the vocal bands may first be affected in some instances, why should not the adductor fibers alone be affected in other instances? May there not be two sets of nerve-fibers, the adductor and the abductor, in this case the latter group being affected?

I recognize no difficulty whatever in distinguishing between the cadaveric position and that of extreme abduction. In the latter condition the position of the bands is the same as is seen in extreme inspiration.

A CASE OF POST-PARTUM SYNOVITIS.

By JOHN FERGUSON, M. D., L. R. C. P., TORONTO, CANADA,
DEMONSTRATOR OF ANATOMY, TORONTO SCHOOL OF MEDICINE.

The subject of the following account was delivered of her first child on the 22d of February. The woman was in her thirty-third year, was of slight figure and nervous temperament, and had been for years a great sufferer from dyspepsia. The labor was an extremely difficult one; the os uteri was very rigid, the pelvis deep and contracted in all its diameters, while the perineum was tense and unyielding:

About three weeks before her expected confinement she asked me to call and see her, as she wished me to attend her. At this

interview I noticed the hands a little swollen and hard, and the lower eyelids puffy. On inquiry, I found that she suffered a good deal from headaches, that there was some nausea, that there was at times giddiness, and that objects were seen floating before her eyes. On examining the urine, I found it to contain about ten per cent. of albumin by volume when heated in the test-tube. She was placed under treatment for this, and improved considerably by the time of her confinement.

The head entered the pelvis with the occiput directed exactly to the left. Instead, however, of rotating forward, it rotated backward, causing an occipito-posterior position. The probable cause for this change was, that the pubic bones on each side of the symphysis were depressed inward toward the pelvic cavity. This, of course, would tend to make the occiput glide backward to the sacrum, as the left depressed pubic bone would come into relation with the right occipito-parietal suture of the fetus, and guide the occiput backward.

I applied the forceps with the hope of being able to adjust the position. This I could not accomplish; and, as the head became firmly wedged in the contracted passage, it became necessary to get assistance. Dr. Bryce was sent for, and we had fully two hours' hard work before we could bring the head down. During the passage of the head the rigid perinæum gave way, clean through into the rectum.

When the delivery was over the patient was in a state of extreme exhaustion, and was allowed to rest for a short time. I returned and put in five deep sutures. The patient became feverish almost from the first. There never were any chills. On the third day her temperature had reached 105° F. There was marked delirium. On the evening of this day there was a medium severe attack of uræmic convulsions. I gave most stringent orders to keep the legs tied together. This was not so carefully attended to as I could have wished.

I must confess I felt a little afraid to use opiates with any degree of freedom to constipate the bowels, knowing the condition of the kidneys. Still, I did order moderate doses. In spite of this the bowels moved. Indeed, there was a temporary diarrhœa. Owing to the convulsions and the moving of the bowels, the sutures gave way, and whatever union had taken place was broken down.

The septic condition of the system, which was very great, as shown by the high temperature, weak, rapid pulse, sallow countenance, and extreme depression, was treated by large doses of quinine, alcoholic stimulation, nourishing diet, sponging to the entire surface, and utero-vaginal injections every four hours. These injections consisted alternately of hydrarg. perchlor., one in two thousand, and phenol, one in eighty.

From the septicæmia the patient made a good recovery, at least so far as one could judge. In about four weeks from the date of confinement she was allowed to be out of bed for a short time each day. There was at this time rapid improvement in her general appearance. The temperature was perfectly normal. There was no evidence of pelvic trouble, and only a very slight discharge, which was thoroughly free from any fetor.

In about two weeks from the date when the patient began to sit up, or six from the date of the labor, and when the strength had been sufficiently regained to permit of the greater part of the day being spent out of bed, a pain was felt and complained of, at one of my visits, in the left wrist. On examination, it was found to be tender, a little swollen, only very faintly reddened, and painful on motion. There had been no chill whatever. Certainly I did not like this new visitor, but, as I could not tell his true nature nor make out a full identity for him, nothing was done save applying a soothing embrocation and warmth. Soon, however, other joints became involved,

and the disease traveled from one to another, until all had been invaded with the exception of the right hip.

During the first three weeks of this joint affection there were many painful points on the skin of the lower extremities from the knees downward. These corresponded in every respect to those met with in erythema nodosum.

At no time during the course of the joint-inflammation was there any albumin in the urine, as shown by repeated examinations.

The secretion of the skin was never sour or acid in smell. There was rather a heavy, musty odor, but not sweet nor like that of newly-mown hay.

No abscess formed during the progress of the case. The swollen, reddened, and generally tender condition of the joints subsided in four or five days to a week. There were usually several attacks in the same joint.

From the date of the arthritic seizure until it began to subside there was a sallow hue in the skin, at times almost approaching to a very faint jaundice tint.

The pulse was weak, soft, and irregular, and ranged about 100 to 110. There were frequent palpitations. The temperature varied often, but was never high. It stood mostly a little above or a little below 101° F., and only once did I find it as high as 103° F. At no time were there chills, nor any irregular sensations that could justly be regarded as their analogue. There was considerable nausea, and occasionally vomiting of a bilious character, and on three different occasions an attack of diarrhœa, when the food was passed somewhat undigested. The stools could not at any time be said to be pale or clay-colored. The temperature remained slightly above the normal for about two weeks after the joint pains had subsided.

On two dates the skin of the scalp was excessively tender.

The patient never had had ague, nor had she lived in an ague locality. Now, if we ask the question, What was the true nature of this case? several answers present themselves for our choice: First, there is that of an ordinary attack of acute rheumatism. Now, I am inclined to rule this out. There was not that marked rise of temperature that we would expect in a case so severe as to involve so many joints. Then, again, the sweat had not the sour smell we find in these cases. The disease also appeared to have more of a synovial character than that of true acute rheumatism, and, finally, the temperature remained elevated for about two weeks after the joints became free from pain. On the other hand, the metastatic nature of the disease, the erythema nodosum, and, according to Buzzard, the tenderness of the scalp, point to its rheumatic nature.

Against its truly pyæmic character may be adduced the fact that at no time did there occur the formation of an abscess.

It seems to come more under that class of cases where the absorption of impurities gives rise to joint affections without the formation of pus. Barwell, in his work on the diseases of the joints, mentions that he has met with altogether four cases of post-partum synovitis; and, from his description, they pursued a course somewhat like my case. Some infection is taken up from the utero-vaginal tract, which acts injuriously on the joints, giving rise to a metastatic synovitis.

As to treatment, preparations of the willow were used, and without the least beneficial effects. This is quite in harmony with Longstreth's teaching] that, if the joint

trouble is septic, then these agents have no power. This would also point away from a rheumatic nature.

Quinine in five-grain, and potassium bicarbonate in thirty-grain doses, as advised by Garrod, were then given, after the other had been tried for three days. These doses were given every four hours. This mixture gave very great relief to the joint pains. When the alkali and quinine had been used for about three weeks, the stomach became irritable, and would no longer bear the treatment.

Barwell's treatment for these cases was then adopted with great advantage. This consists in giving about fifteen or twenty grains of sulpho-carbolate of sodium, with about two grains of quinine, in half an ounce of camphor-water. Although the temperature still remained a little above the normal, the whole condition of the patient was greatly benefited, the skin becoming clearer and the joints freer, and there were less exhausting perspirations, a better appetite, and no nausea at the medicine.

Once during this part of the treatment she was put on the use of iron, as recommended by Bartholow and Reynolds; but at once relapsed, and had to be placed again under antiseptic medication. From this time forward the progress was steady, though slow.

No local treatment was employed, as there was not the slightest evidence of any discharge from the genitalia.

A CASE OF

CAVERNOUS PAPILLOMA OF THE VOCAL BAND.*

By FRANKLIN H. HOOPER, M. D.,

BOSTON.

THE features of this case, which seem to me of sufficient interest to warrant its being reported, are: 1. That, histologically, the tumor differs from any recorded case of intra-laryngeal growth. 2. That, although the diagnosis of "cyst containing blood" was justifiable from the appearances on laryngoscopic examination, in the clinical aspects of the case there were notable differences from those instances of laryngeal cysts and angiomas with which we are familiar through the writings of Moure, Cervasato, Tobold, Fauvel, Elsberg, and others. 3. The rather unusual and unexpected, but happy, termination of the disease.

The patient was first seen by Dr. Knight, November 22d, 1882, at which time he refused to submit to any operative measures. Returning in the summer of 1883, at a moment when Dr. Knight was compelled to leave the city, he was referred to me for treatment. The history is as follows:

T. G. C., a clergyman, thirty-two years of age, of nervous, energetic temperament, has always enjoyed good health, with the exception of his present trouble, which began in September, 1882, from taking a severe cold, accompanied by hoarseness. The symptoms of the cold lasted about three weeks, but the hoarseness has remained to the present time (August 1, 1883), causing him so great annoyance and distress that he had about made up his mind that it would be necessary for him to abandon

his profession. Apart from the hoarseness, there has been no symptom referable to the larynx other than a disposition to continually "scrape" it, and it seemed as if, by an extra effort, he might remove the source of the trouble.

Examination with the laryngoscope revealed a small nodular, sessile growth, situated on the anterior third of the left vocal band, and projecting from its free edge. Its size may be compared to a No. 7 shot ($\frac{1}{8}$ inch in diameter). Its walls were smooth, of a pale-yellow color, and, when examined with the sunlight, the red color of the blood within could be distinctly seen through them. The situation and shape of the growth suggested that it might be classed under the head of "cystic tumor"; but its peculiar color, the impossibility of applying the probe test on account of its small size, and the general appearances, so unlike the descriptions of angiomas, rendered the diagnosis as to its real nature somewhat doubtful. It was surmised, however, that the primary cause had been either a dilated or perhaps a ruptured capillary, the blood becoming subsequently encapsuled.

At the patient's second visit Fauvel's forceps was passed into the larynx, and borne well against the left vocal band. No attempt was made to open the forceps while in the larynx, the object of the procedure being principally to test the patient's tolerance of the instrument, and with but the faintest hope that it might make some impression on the tumor. On removing the forceps, it was with considerable surprise to myself, as well as gratification to the patient, that the growth was seen floating in the tumbler of water in which the instrument had been placed. The hoarseness had disappeared, and the voice was immediately restored. The growth had been knocked off close to its attachment to the vocal band, and had luckily adhered to the end of the instrument, together with a certain quantity of mucus. The hæmorrhage was insignificant, amounting merely to a single drop of blood. The growth was firm to the touch, and retained its globular form. It was handed to Dr. W. W. Gannett, pathologist to the City Hospital, for examination, and the subjoined report and drawing of the microscopical appearances were kindly furnished by him.



CAVERNOUS PAPILLOMA.

"The above is a diagram of a section vertically through the tumor of the larynx, left a few days ago. The outer covering is a many-layered, flat epithelium, showing dentate cells. Next is a rather loose connective-tissue wall, forming on its outer portion a basis for the epithelial cells, and on its inner surface the lining of a rather irregular cavity, with projections from the wall into the cavity, these representing, probably, trabeculae which had been cut across. The cavity itself is filled with red-blood corpuscles. The wall has not the structure of a *cassell* proper, but is rather a cavernous tissue.

"My opinion is that it was a cavernous tissue from the start, and does not represent a dilated blood-vessel.

* Read before the American Laryngological Association, May 13, 1884.

"I do not remember to have seen such a tumor before, but should think the term *Cavernous Papilloma* justifiable."

(Signed) W. W. GANNETT.

The patient was advised to abstain from preaching, and to allow the larynx as complete rest as possible for at least one month, but no special treatment was directed to the seat of the growth, and the day following its removal he left the city for his home in a neighboring State. There has been no recurrence. In a letter received April 10, 1884, he writes, in answer to my question, that he has "held special meetings six weeks in succession, talked or preached every night, and throat as good as new."

The only recorded case which bears any resemblance histologically to the one under consideration is described by Fauvel* as a "papillary polyp, with very pronounced vascular dilatations, making it resemble an angioma," which rather meager account is all that is given of its minute structure.

Dr. Fauvel's patient was a man, twenty-eight years of age, who for two years had been troubled with a progressive hoarseness. The tumor, of the size of a pea, rounded and smooth, was situated on the free edge of the right vocal band, and had a broad attachment. It was of a peculiar blackish color. Many attempts were made to remove the growth, but with no result except to bruise it, as it would glide from between the blades of the forceps each time it was grasped. Dr. Fauvel suggests that the cavities which were filled with blood may perhaps be accounted for by these manipulations which forcibly compressed the tumor. It was finally removed by evulsion, the hæmorrhage being more than usually abundant. No recurrence took place.

DISCUSSION.

Dr. CARL SEILER.—I am very glad to have heard the history of this case, the more so because I have met with one similar in almost every detail. The tumor was an angioma, of small size, of dark-red color, situated on the upper surface of the right vocal band, and not projecting from the edge. The man was studying elocution, and only complained of slight hoarseness. After considerable difficulty I succeeded in nipping off the growth. On examination, it was found to be composed of cavernous tissue, constituting a true angioma. The cavernous structure was small as compared with the epithelial.

Book Notices.

Dr. G. Beck's *therapeutischer Almanach*. II Jahrgang, 1884.

Des Taschenbuches der neuesten Therapie III Bändchen, 2 Heft. Bern, Leipzig, und Stuttgart: J. Delp, 1884. Pp. 88. *Therapeutische Notizen der "Deutschen Medizinal-Zeitung."* 1880-1883. Herausgeber Dr. JULIUS GROSSER. Berlin: Verlag der "Deutschen Medizinal-Zeitung," 1884. Pp. iv+100-xxiv. Price, 1.50 M.

THE scope of these two little books is very much the same, and their contents in many cases identical.

Dr. Beck's "Almanach," a former issue of which we received last year, is an index and brief notice of all the items of

therapeutic interest contained in the issues for 1883 of the "Index Medicus," Schmidt's "Jahrbücher," Virchow and Hirsch's "Jahresbericht," the "Allgemeine medicinische Zeitung," the "Bulletin général de thérapeutique," the "Journal de médecine et de chirurgie pratiques," the "Moniteur thérapeutique," the "Therapeutic Gazette," the "Monatsschrift der Ohrenheilkunde," the "Centralblatt für Gynäkologie," the "Centralblatt für Chirurgie," and the "Centralblatt für Augenheilkunde."

Dr. Grosser's "Notizen," which is almost identical in plan, except that the articles are arranged alphabetically instead of topically, embraces references to all the articles of therapeutic value contained in the "Deutsche Medizinal-Zeitung" for the four years from 1880 to 1883, inclusive. Nevertheless, it contains less than twice as much matter as the other book, which comprises only one fourth the same time, and we miss from it many important notices which the other contains. We can scarcely, therefore, agree with the author's assertion: "Da die 'Deutsche Medizinal-Zeitung' Alles wichtige aus den therapeutischen Veröffentlichungen der Jahre 1880-1884 enthält, so werden die Notizen auch andere Kollegen nichts Wesentliches vermissen lassen." As completeness is the one attribute essential for an index, Dr. Beck's "Almanach" must be allowed the precedence over its rival. Both, doubtless, would be useful to any one making a speciality of the study of therapeutics, or to any one anxious to learn all that is written about any individual drug; and, to a certain limited extent, they will be serviceable to the general reader. But the latter, to our thinking, will derive much more benefit from an index of his own compiling, drawn from his own reading, than by taking his information at second hand from books like these.

BOOKS AND PAMPHLETS RECEIVED.

The Principles of Ventilation and Heating, and their Practical Application. By John S. Billings, M. D., LL. D. (Edinb.), Surgeon, U. S. Army. New York: The Sanitary Engineer, 1884. Pp. 216. [Price, \$3.]

Lehrbuch der Physiologie für akademische Vorlesungen und zum Selbststudium. Begründet von Rud. Wagner, fortgeführt von Otto Funke, neu herausgegeben von Dr. A. Gruenhagen, Professor der medicin. Physik an der Universität zu Königsberg i. Pr. Siebente, neu bearbeitete Auflage, mit etwa zweihundertundfünfzig in den Text eingedruckten Holzschnitten. Erste Lieferung. Hamburg u. Leipzig: Leopold Voss, 1884. Pp. 160.

Quarantine and Sanitary Operations of the Board of Health of the State of Louisiana during 1880, 1881, 1882, and 1883. By Joseph Jones, M. D., President of the Board of Health of the State of Louisiana. Annual Report of the Board of Health to the General Assembly of the State of Louisiana, 1883-'84. Baton Rouge, 1884.

Letter from the Secretary of the Treasury, transmitting the Report of the Chairman of the Treasury Cattle Commission upon the subject of Disease in Cattle which recently prevailed in certain parts of Kansas and Illinois.

The Revelations of Fibrin. Unexpected Proof of the Immortality of Life. By Rollin R. Gregg, M. D., Buffalo, N. Y. [Reprint from the "Buffalo Courier."]

Deutsche Poliklinik der Stadt New York. Erster Jahresbericht über die Thätigkeit der Anstalt, vom 17. Mai 1883 bis 16. Mai 1884.

Twenty-fourth Annual Announcement of the Bellevue Hospital Medical College. 1884-'85.

Report of the Board of Managers of the Pennsylvania Hospital. 1884.

* "Traité pratique des maladies du larynx," Paris, 1876, p. 522.

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THE CATSKILL MEETINGS.

THE annual meetings of the American Otological Society and the American Ophthalmological Society, held in the Catskill Mountains last week, seem, so far as can be judged from the reports given in this issue of the journal, to have been quite up to the usual degree of success. It will be noticed that the papers read were for the most part of a casuistic character rather than such as to enter upon anything like a systematic study of broad questions in pathology or practice. This seems to be the tendency of specialties after they have emerged from the formative stage, so to speak, and have become more or less settled, and doubtless it must be accepted as a token that debatable matters of generalization have to a great extent been decided or conceded to be for the time being insusceptible of settlement, and as arguing a general agreement that further clinical study is the need of the times. It is not strange that this should be the case, particularly in a specialty so nearly an exact science as ophthalmology.

Although the president of each society was absent, both gatherings were fairly representative of the various sections of the country, and certainly a great amount of work was gone through with. It has been questioned, and with reason, we think, whether the national societies were quite doing justice to the profession at large in holding their annual meetings at places of summer resort, and it has been urged that by so doing the societies took a stand still further aloof from the general body of physicians than was the natural result of the special nature of their work. It seems to us that, as general propositions, these objections to rural places of meeting are practically unanswerable, and it is within our knowledge that not long ago they led one of our national societies to reject a proposal to hold a meeting at a watering-place. We fancy, however, that it is only to a very limited extent, if at all, that they hold true of societies concerned with the study of branches so sharply differentiated from the general practice of medicine as those of ophthalmology and otology. At all events, the place of holding the next meetings of these societies is still an open question, for the Ophthalmological Society voted to leave the matter to its secretary and treasurer, and the meeting of this society governs that of the other so far as regards time and place.

THE STATE BOARD OF HEALTH'S STATISTICAL NOMENCLATURE.

THE State Board of Health of New York has recently issued a document entitled "The Statistical Nomenclature of Causes

of Death," designed to facilitate uniformity in the certification of deaths, and thus add to the accuracy and the intelligibility of the vital statistics of the State. The list, which is intended for the guidance of local boards, registry officers, and the medical profession, is essentially an abridgment of the new issue, now in press, of the "Nomenclature of Diseases" prepared by the Royal College of Physicians, of London, and revised by that body in conjunction with representatives of the National Board of Health of this country—an abridgment made by the late Dr. Elisha Harris, who was the secretary of the State Board at the time of his death. An explanatory introduction, signed by Dr. Harris, precedes the list, and this introduction, we think, will be found interesting, both by reason of its embodying the mature reflections of a very experienced statistician on the features desirable in a list of this sort, and because it affords some insight into the character of the revision which the College of Physicians' "Nomenclature" has undergone.

So far as it is possible to judge from this partial list, we are inclined to think that the new edition of the work of the College of Physicians will be found to be a distinct improvement upon the old one. Retaining essentially the anatomical basis for the nomenclature and classification of diseases, it gives evidence of a more conservative policy in the matter of adopting names, either as class designations or for individual diseases, that tend to convey ideas of pathology or ætiology which are at all questionable. For example, the new arrangement classes most of the diseases formerly called "zymotic" under the non-committal term of "general diseases"—a change which is certainly in the direction of a scientific suspension of judgment. To the same purpose, the disease before named "simple cholera" now figures as "epidemic diarrhœa," and "cholera infantum" is to be entered as "diarrhœa," "entero-colitis," or "epidemic diarrhœa." In short, the tendency is toward definiteness of expression and the avoidance of doctrinal points; and this is a tendency which makes in favor of increased usefulness, for any attempt to teach pathology or ætiology in such a document is out of place and can only act as a clog upon the availability of the work in its proper sphere.

The abridged list gives the names of the individual diseases in English, Latin, French, and German. It does not appear whether or not the French and German equivalents are to be given in the new edition of the "Nomenclature" of the College of Physicians. No doubt their addition would be a desirable feature even for the use of British physicians, but among a population so composite as that of the State of New York it is almost a necessity, and, if it was made by Dr. Harris, it must be taken as another proof of his devotion to the accuracy of statistical registration, and of his carefulness, for, although we have noticed some minor slips, we must say that the lists of equivalents are in general exceptionally accurate. While it would be ungracious to make the few errors that we have noticed the subject of special criticism, we may express the hope that in future issues of the lists the French word *matrice* will not be treated as if it were masculine.

MINOR PARAGRAPHS.

THE ALLEGED FRAUDS IN THE MEDICAL DEPARTMENT OF THE NAVY.

For some weeks past, mention has been made in the newspapers on various occasions of certain alleged frauds in the Bureau of Medicine and Surgery of the Navy. The charges have seemed to implicate only the clerks, and consequently until now they have had no particular interest for the medical profession. Recently, however, that spotless patriot, the Secretary of the Navy, goaded on by an intimation from one of the candidates for the office of Vice-President that these alleged frauds pointed to the propriety of a closer scrutiny of the affairs of the navy, and to their administration by new hands, wrote a letter to the candidate in question, wherein, with characteristic chivalry, he sought to shift the whole burden of responsibility for the frauds from his own shoulders on to those of the former Surgeon-General of the navy, Dr. Wales. Now, when we bear in mind that Dr. Wales has not been formally charged with complicity in the frauds, least of all convicted thereof, the method adopted by Mr. Chandler of besmirching his reputation seems hardly likely to carry conviction to any fair-minded person.

NEWS ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending July 22, 1884:

DISEASES.	Week ending July 15.		Week ending July 22.	
	Cases.	Deaths.	Cases.	Deaths.
Typhus	3	0	3	1
Typhoid Fever	7	3	20	6
Scarlet Fever	45	7	51	16
Cerebro-spinal meningitis. . .	2	1	4	4
Measles	181	26	164	31
Diphtheria	29	13	27	17
Small-pox	0	0	1	0

Cholera has increased rather than shown any tendency to subside in Toulon and Marseilles during the past week, but the outbreak is still practically confined to those cities, although a few cases are said to have occurred in Paris, Lyons, and Vienna. It is quite possible that the cases reported to have occurred in those cities were not really cholera. Precautionary measures continue to be taken vigorously throughout Europe, and it is satisfactory to be able to record that the authorities in various countries are approaching a substantial agreement in regard to the means best suited to stay the course of the disease; on the one hand, the British seem less disposed to ignore the advantages of moderate quarantine, and, on the other hand, the people of the Continent are beginning to see the uselessness of cordons on land, and, we trust, not only the uselessness but the cruelty of shutting a lot of human beings up together in an improvised settlement, obstructing travel, and, worst of all, fumigating persons with burning sulphur. It is such misdirected zeal as dictates practices of this sort that does more than anything else to bring quarantine into undeserved contempt.

Yellow Fever is reported to be prevailing on the Isthmus of Panama to such an extent that, together with an epidemic of dysentery, it has filled the hospitals both of the city of Panama and of Aspinwall. The death of a child is said to have occurred from yellow fever in New Orleans on the 23d inst.

The Foot-and-Mouth Disease.—The cattle shippers of Montreal are reported to have asked the authorities at Ottawa

to take measures to provide for a rigid inspection of cattle taken over the border from our Western States, fearing, as they allege, the importation of the foot-and-mouth disease.

A Marine Sanitary Patrol has been provided for in the following order, issued by the Secretary of the Treasury, under date of July 19th:

"In view of the presence of an epidemic of cholera, the existence of yellow-fever, and the Oriental plague, abroad, the safety of the public health in this country demands the enforcement of rigid quarantine against the introduction of these diseases through vessels arriving at our ports. Therefore, in order to assist local authorities in the maintenance of quarantine as provided in Section 4,792, Revised Statutes, the unrepealed portion of the act of April 29, 1878, and recent appropriation acts authorizing the President to maintain quarantine at points of danger, the President has determined to establish, by means of the vessels of the Revenue Marine, a national patrol of the coast of the United States, so far as it may be practicable under existing law and consistent with the performance of the other duties confided to that Service.

"You are accordingly directed to cruise actively with the Revenue Steamer _____ under your command upon the outer lines of your cruising grounds, and to exercise especial vigilance in speaking all vessels arriving from foreign ports, directing your inquiries, first, as to the port from which the vessel hails, and, secondly, as to the health of those on board at the time of departure, during passage, and at the time of hailing; and should the information gained indicate a condition of contagion or infection in the vessel or crew, or that the vessel has left a port at which contagious or infectious diseases were prevailing, her master will be directed to proceed for examination to the outer quarantine station provided for her port of destination.

"The following regulations will be observed relative to the inspection of vessels:

"If a vessel be found with sickness on board, or in a foul condition, she will be directed to proceed to the quarantine station hereinbefore indicated, and the revenue-marine officer will immediately notify the proper quarantine officer. In such case no person will be permitted to board the vessel until the medical officers in charge of the quarantine shall have given the usual permit.

"Should the pilot or master of a vessel when hailed report cases of recent or present sickness on board, the revenue officer will not board, but will send her immediately to quarantine.

"Quarantine officers will be recognized as follows, viz.:

"Medical officers or acting assistant surgeons of the Marine-Hospital Service, in charge of Gulf, South Atlantic, or Cape Charles quarantines, or any officer of said Service, on duty at any port on the interior rivers or the Great Lakes; and all quarantine officers acting under proper State or local authority.

"Herewith is transmitted a list of the ports and places where contagious diseases exist at the date of this circular. This list will be amended from time to time and furnished by the Marine-Hospital Service for your information.

"Special regulations to aid local quarantine authorities will be promulgated hereafter, should occasion require."

Railway Sanitation in Illinois.—With its usual well-directed energy, the Illinois State Board of Health has set to work to remedy the evils incident to insanitary conditions connected with the construction and the working of railways. Under date of July 17th, the secretary of the board, Dr. John H. Rauch, sent the following circular to each of the companies doing business in the State:

"As will be seen by a reference to the resolution in the

inclosed circular, the board deems it important that preparation be made for the possible advent of cholera.

"It is desired, as one important step in the general sanitary movement already inaugurated, that all railway stations, depots, and the grounds surrounding the same, be put in the best attainable sanitary condition, with especial reference to water-closets and latrines; and to the character of the water-supply for the use of employees and passengers. The same supervision should also be extended to passenger cars in the points specified. Accumulations of stagnant water, or the flow and seepage of foul drainage, in the vicinity of human habitations, are always injurious to health; but during a cholera epidemic they are especially dangerous. So far as such conditions obtain as the result of embankments or road-beds, they should be remedied as speedily as possible.

"The preservation of the public health—whereby, among other things, interruption of travel and traffic may be prevented—is a matter in which common carriers and the general public have a community of interests and duties alike; and to which it usually only needs that attention be directed in order to secure ready and efficient co-operation."

Cheese Poisoning in Michigan.—We are indebted to the secretary of the Michigan State Board of Health, Dr. Henry B. Baker, for an account of the last quarterly meeting of the board, held at Lansing on the 8th of July, at which, among other matters of interest, the subject of cheese poisoning was reported upon. The secretary presented a report on four outbreaks during the months of May and June, at Middleville, Jerome, Jonesville, and Big Rapids. All of the persons who ate of the cheese in question, about one hundred and sixty-four in all, were taken sick with the same symptoms, viz, pain and a burning sensation in the stomach, intense vomiting and purging, feebleness of the pulse, coldness of the extremities, and a tendency to collapse. All finally recovered. The cheeses were ordinarily good-looking specimens, but, when they were cut or broken, a liquid oozed into the pores. In each case the cheese was made at a factory in Fruitridge, Lenawee County.

Dr. V. C. Vaughan also read a report on the subject. At the request of the secretary, he had visited the factory in Fruitridge, and had analyzed specimens of the cheese. Everything about the factory had appeared to be scrupulously clean, and nothing in the vats, the cans, or the surroundings offered an explanation of the cause of the poisoning. Analysis showed no arsenic, copper, lead, iron, or other mineral poison. When the cheese was cut or broken, a whitish liquid oozed into the pores, and in this liquid microscopic organisms were detected. The liquid was very strongly acid. For more than a hundred years, the report continued, the attention of the scientific world had been drawn to the subject of cheese poisoning by repeated outbreaks of this sort, both in this country and in Europe. Much had been written on the subject, and many investigations had been carried on, especially in Germany. By various observers the poisoning had been ascribed to diseased milk, decomposition, and the development of certain fatty acids, etc.; but we did not yet know what made the cheese poisonous. In regard to the cases under consideration, the maker of the cheese had stated that the cheese which had produced the bad results had all been made between the 26th of April and the 26th of May, in the same manner and with the same care as other lots which had given no cause for complaint. Good cheese was only very slightly acid, and was slow in reddening blue litmus paper, but the poisonous cheese was intensely acid, a freshly cut surface of it reddening litmus paper instantaneously. This test for poisonous cheese appeared to be practical, as the litmus paper could be applied by any grocer to a freshly cut surface of the

cheese. If it was instantly turned red by the liquid which oozed into the pores, the cheese was to be suspected of being poisonous. We are informed that Dr. Vaughan's report will be published in full in the next Annual Report of the board.

The Oriental Plague, according to a press dispatch from St. Petersburg, dated July 18th, has appeared at Khars, in Asiatic Russia, and at various stations in the Caucasus, whither it was brought from Persia. It is added that the sanitary cordon at Baku proved entirely inefficient, eight hundred deaths from the disease having taken place at Bedra during the month of May.

The Latest Micrococcus, according to the "*Deutsche Medizinische Zeitung*," may be supposed to be the mysterious article advertised in the "*Berliner klinische Wochenschrift*" under the title of "*Residuen von rheumatischem Akutis*." The "*Zeitung*" expresses its joy that this new micrococcus has been dragged into the light of day, and wonders what sort of vehicle it will show itself to be.

The "Pacific Medical and Surgical Journal."—It is announced that the San Francisco "*Western Lancet*" is to be consolidated with the "*Journal*," and that the joint issue will be edited by the senior editor of the "*Journal*" and the editor of the "*Lancet*." An addition to the amount of reading matter is promised, together with other new features which, we have no doubt, will make this sterling journal still more valuable to the profession on the Pacific coast than it has been heretofore.

The American Ophthalmological Society.—At the recent annual meeting the following-named gentlemen were elected officers for the ensuing year: Dr. W. F. Norris, of Philadelphia, president; Dr. Hasket Derby, of Boston, vice-president; Dr. O. F. Wadsworth, of Boston, secretary and treasurer; Dr. J. S. Prout, of Brooklyn, corresponding secretary. Dr. Miles Standish, of Boston, Dr. John Van Dyne, of Syracuse, and Dr. S. O. Richey, of Washington, were elected to membership. The next meeting will be held on the third Wednesday of July, 1885, at some place to be selected by the secretary.

The Vienna General Hospital.—The "*Medical Times and Gazette*" announces that the one hundredth anniversary of the hospital will be celebrated on the 15th of August. The same journal states that Professor Auspitz has been appointed to succeed Professor Zeissl as director of the venereal wards.

The Summer Surgical Course at Kiel, as we learn from the "*Medical Times and Gazette*," was opened with an address by Professor Esmarch, who concluded by calling for three cheers for the Nestor of German surgery, von Langenbeck. On the same occasion he unveiled a bust of that surgeon and one of Stromeyer.

The Albany Hospital, as we learn from the "*Medical Annals*," of that city, is now provided with an ambulance which is described as very well appointed. The ambulance is to be kept in a livery-stable in State Street, subject to call by telephone or otherwise.

The Diffusion of Homœopathy.—The "*Gazzetta degli Ospitali*" quotes from another journal a statement to the effect that there are 403 homœopathic physicians in France, 244 in England, 94 in Spain, 26 in Belgium, 7 in Holland, 34 in Switzerland, 141 in Italy, 12 in Scandinavia, 67 in Russia, 47 in Portugal, 4 in Germany, 4 in Asia, 6 in Africa, and 1,612 in America.

The Contamination of "Soda Water" with copper salts and compounds of lead, derived from the faucets of the appa-

ratus from which the liquid is drawn in the shops, has lately been made the subject of investigation by the boards of health of New York and Brooklyn, in consequence of which the boards recommend the use of glass faucets instead.

The Italian Ophthalmological Association, according to the "Gazzetta degli Ospitali," will hold its meeting this year at Turin instead of at Palermo, in order that advantage may be taken of the large attendance expected at the National Exposition.

A Medical Prince.—The "Progrès médical" learns that Prince Ludwig Ferdinand, of Bavaria, wrote his inaugural thesis on the anatomy of the tongue, "A Study in Comparative Anatomy." There were fourteen sheets of text and one hundred and four chromo-lithographs.

Reported Suicide of a Physician.—Dr. William M. Dorrán, of Mount Vernon, N. Y., was found dead on Tuesday of this week, as the result of a pistol-shot wound of the head, supposed to have been suicidal. Dr. Dorrán was a native of Ireland, and a graduate of the medical department of the University of the City of New York. About a year ago he retired from practice, in consequence of failing health.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from July 13, 1884, to July 19, 1884:*

WRIGHT, J. P., Major and Surgeon. Assigned to duty as Post Surgeon, San Antonio, Texas. Par. 4, S. O. 87, Headquarters Department of Texas, July 14, 1884.

McELDERREY, HENRY, Captain and Assistant Surgeon. From Department of the Platte to Department of the East. Par. 12, S. O. 165, A. G. O., July 16, 1884.

EWEN, CLARENCE, Captain and Assistant Surgeon. Assigned to duty as Post Surgeon, Fort Sidney, Nebraska. Par. 8, S. O. 58, Headquarters Department of the Platte, July 11, 1884.

ELBREY, F. W., Captain and Assistant Surgeon. Leave of absence still further extended six months on surgeon's certificate of disability. Par. 6, S. O. 161, A. G. O., July 12, 1884.

WAKEMAN, WILLIAM J., First Lieutenant and Assistant Surgeon. Relieved from duty at Fort D. A. Russell, Wyoming Territory, and assigned to duty as Post Surgeon, Fort Washakie, Wyoming Territory, relieving Assistant Surgeon Norton Strong. Par. 9, S. O. 58, Headquarters Department of the Platte, July 11, 1884.

Appointment.

EWING, CHARLES B., to be Assistant Surgeon, with the rank of First Lieutenant, July 5, 1884, vice Middleton, promoted. Memorandum, A. G. O., July 14, 1884.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the Navy during the week ending July 19, 1884:*

GIHON, A. L., Medical Director. Ordered as member of Board of Inspection.

PEBSONS, R. C., Passed Assistant Surgeon. Ordered to U. S. S. Saratoga.

SEIGFRIED, C. A., Passed Assistant Surgeon. Detached from U. S. S. Saratoga and ordered to Naval Hospital, Brooklyn.

SAYRE, T. S., Assistant Surgeon. Ordered to U. S. S. Independence.

Society Meetings for the Coming Week:

WEDNESDAY, July 30th: Auburn, N. Y., City Medical Association; Medical Society of the County of Gloucester, N. J.

OBITUARY NOTES.

Mr. Caesar Hawkins, of London.—A cable dispatch published on Tuesday announced the death of this well-known surgeon. For many years Mr. Hawkins was one of the surgeons to St. George's Hospital, and at the time of his death a consulting surgeon and a trustee of that institution. He was a frequent contributor to the English medical journals.

Dr. William Fruitnight.—This promising young physician died suddenly on Sunday, July 20th. He was a graduate of the Bellevue Hospital Medical College, in the class of 1880.

Proceedings of Societies.

CHICAGO MEDICAL SOCIETY.

Meeting of July 14, 1884.

The President, Dr. D. A. K. STEELE, in the chair.

Pyosalpinx treated by Volkmann's Method.—Dr. F. H. MARTIN read the history of a case as follows: Mrs. T., an American lady, twenty-seven years old, married, weighing 200 lbs., had had no children, but had had an abortion at the third month four years before coming under the reader's observation. She consulted him a year ago, supposing herself to be pregnant, as she had some of the symptoms of pregnancy, such as morning-sickness, enlargement of the breasts with pain, and increased size of the abdomen. Although she had menstruated regularly during the four months that she had considered herself pregnant, yet the flow was scanty. An ordinary digital examination was made, but no diagnosis was reached, and the patient was asked to call again, which she did in two months, when a second examination proved equally unsatisfactory. She was now seen in consultation by Dr. W. H. Byford, who, in consideration of her positive declaration that she felt the fetal movements, together with the other symptoms, was inclined to pronounce her pregnant, although her menses had continued to appear scantily every month. Five months subsequently she again consulted Dr. Martin, who, in conjunction with Dr. R. W. Bishop, made a very thorough bimanual examination with the patient anesthetized. The uterus, small and undeveloped, was found crowded close behind the symphysis pubis, and inseparable from a large, firm-walled tumor, about as large as the uterus at the fifth month of gestation, occupying Douglas's *cul-de-sac*, extending upward nearly to the umbilicus, and situated a little to the left of the median line. Owing to the patient's corpulence and the thickness of her abdominal wall, it seemed impossible to make an exact diagnosis. The uterus measured two inches and a half in length. The patient was again taken to Dr. Byford, who, after a careful examination, pronounced the tumor a fibroid of the uterus, but advised that an operation for its removal be delayed, although the patient was suffering greatly from the pressure on the bladder and rectum, from intense backache, and from other reflex manifestations. During the next two months her sufferings increased very decidedly, and she begged for the removal of the tumor or for some other radical measure of relief.

May 15th, with the assistance of Dr. R. W. Bishop, Dr. L. McArthur, Dr. E. L. Hollister, Dr. L. T. Potter, Dr. S. Black, Dr. T. H. Swayne, and Dr. E. J. Doering, Dr. Martin performed abdominal section, all necessary antiseptic precautions being observed. The incision made was eight inches in length, extending from very near the umbilicus to the symphysis pubis.

The omentum was firmly adherent to the tumor, the adhesions covering a space three or four inches in diameter; they were tied and carefully separated. Not until the omentum was liberated was the true nature of the tumor revealed; it proved to be the left Fallopian tube, excessively dilated, with thick, firm walls. It was so generally adherent to the surrounding parts that it might well have been taken for a fibroid or almost any other sort of solid tumor. Fluctuation was very indistinct, and only by introducing the needle of an aspirator was all doubt removed. On deeper examination, the mass was found to spring from the left horn of the uterus. To the outer side of the pelvis were the remains of the fimbriae, together with the ovary. The wall was muscular in character and very smooth. The operator intended to remove the tumor entire, clamping the small pedicle and attaching it to the wound, but this was found to be impracticable, so extensive were the adhesions. Besides those before mentioned, almost the whole upper surface of the mass was firmly adherent to the intestines, and the rectum was so involved as to appear almost as if it were a portion of the mass. Consequently, Volkmann's method of treating abscesses and similar tumors was resorted to, viz., stitching the wall to the edge of the abdominal wound and treating the cavity, after union, like that of an external abscess. The incision into the abdomen was closed, with the exception of the lower angle, where it was left open for about three inches. The tumor was stitched to the open edges of the wound in such manner that about two inches of its upper surface remained exposed. The wound was dressed antiseptically. On the fourth day firm adhesion was found to have taken place. A free incision was then made into the tumor and a double half-inch drainage-tube was inserted so as to reach to the bottom of the cavity. More than a quart of healthy pus was removed. The cavity was then thoroughly cleansed with a two-per-cent. solution of carbolic acid, and immediately after, to prevent any tendency to carbolic-acid poisoning, with a saturated solution of thymol. Night and morning the cavity was cleansed with a solution of corrosive sublimate, 1 to 3,000, and the external wound dressed with corrosive-sublimate gauze, 1 to 2,000. During the succeeding ten days the patient's condition was favorable, when the temperature suddenly rose to 102° F., and on the eleventh day it reached 103°-6°, the respiration being irregular and frequent and the pulse 160. Dr. C. Fenger saw the patient at this stage, and he concluded that the lining of the abscess was absorbing purulent matter, and that this was the cause of the constitutional disturbance. The opening into the abscess was enlarged with a blunt instrument, and its inner surface was scraped with a dull curette and cauterized with a twenty-per-cent. solution of chloride of zinc. A mural abscess was also found, and was opened and drained. After this the temperature became normal, the patient continued to improve, the abscess ceased to discharge, the wound closed, and perfect recovery ensued.

Dr. J. H. ETHERIDGE spoke of the great frequency of pyosalpinx, and of the common failure to diagnose it, and mentioned a method of examination for the purpose by means of the introduction of the entire hand into the vagina, the patient being anesthetized, as had been practiced by a physician at Denver. He then gave a verbal account of a case of pyosalpinx that had lately come under his observation, and showed the specimen, but did not state the particulars of the operation. The accumulation, which had existed for several months, had been the result of a perimetritis. The right ovary was free from adhesions, and was in a comparatively healthy condition. The right Fallopian tube was inflamed and enlarged. Its fimbriated extremity was so changed and enlarged by previous inflammation that the fimbriae were obliterated and the canal was absolutely occluded. The left ovary was

imbedded in an exudate that blended the broad ligament and the tube into one mass. The left Fallopian tube was inflamed and enlarged throughout its whole length, and its fimbriae were massed and indistinguishable, but its canal was patulous. The outer third of the tube was inseparably agglutinated to the upper surface of the ovary. It was impossible for the free end of the tube to be brought into contact with the ovary. There was a cyst-like accumulation of serum in the exudate within the broad ligament, the result of the perimetritis. There was, of course, irremediable sterility, but the chief source of danger lay in the patulous state of the abdominal end of the left tube, together with its inflammatory state, as the products of inflammation were constantly liable to escape into the surrounding parts and light up renewed attacks of acute inflammation. Nineteen months before, there had been an hæmatocoele, with menorrhagia, resulting in progressive anemia, emaciation, and debility. The entire removal of the uterine appendages seemed to be demanded, but death ensued in the course of a few days.

Dr. H. P. NEWMAN desired further information in regard to the methods employed for diagnosis in the early stages of the affection.

Dr. L. L. MCARTHUR had seen Volkmann's method carried out in three cases of abscess of the liver and in one case of abscess of the spleen, and all the patients had recovered.

Dr. L. T. POTTER asked whether the state of the neck of the uterus, in regard to length, was such as to warrant the introduction of a probe, which was liable to bring on abortion in case of pregnancy.

Dr. MARTIN closed the discussion, remarking that he had not discovered the exact nature of the swelling until he had opened the abdominal cavity, and aspirated the tube, over a year after the time he had first seen the patient. The great thickness of the abdominal wall had made palpation difficult, two or three examinations were made before the position of the uterus was discovered, and, since so many medical men had made a diagnosis of pregnancy, he had for a long time not felt justified in using the probe.

Fracture of the Clavicle and its Rational Treatment

was the title of a paper by Dr. S. W. WETMORE, who demonstrated two methods by the application of bandages to a student of medicine. He remarked that, although literature was replete with appliances for restoring and maintaining the fragments in position, for the last half-century surgeons had very closely followed many of the old masters; but the most simple, practicable, and satisfactory measures were to be credited to men of our own times. If the fracture was complete, the shoulder was depressed and drawn forward by the pectoral muscles, while the sternal fragment was salient and sometimes perforated the overlying tissues, so as to make the fracture compound, although this was rare. It was a peculiarity of the pectoralis major that its uppermost fibers were inserted lowest, and the clavicular fibers thus became the direct antagonists of the sterno-cleido-mastoid, so that the farther the humerus was carried backward the greater was the tension of those fibers and the more perfect the restoration of the fragments. The elbow double figure-of-8 bandage met all the requirements in an ordinary case of fracture in the middle third (the one under consideration), and this method, introduced many years ago by Dr. E. M. Moore, of Rochester, N. Y., was first described.

The reader had treated a number of cases with it during the past ten years, and without any unsatisfactory results. He heartily commended it to the profession. Its advantages were: 1. The apparatus was readily obtained. 2. It could be applied over the ordinary clothing. 3. It was adjusted easily when it became disarranged. 4. Any attendant could be instructed so as to keep it readily in place.

The next method described was that of Dr. Lewis A. Sayre, of New York. [As both this method and Dr. Moore's are well known to the profession, being described in the standard textbooks, we omit the detailed descriptions given by the reader.—*EDITOR.*] It would be obvious that the key to the successful management of this injury consisted in making the clavicular fibers of the great pectoral muscle tense and keeping them so during the period required for repair. No method could be successful if the humerus was allowed to maintain a vertical position. Sayre's method had some advantages: It was evidently the more secure, firm, and unyielding *at first* (very desirable qualities, particularly with children who could not be seen frequently), and the patient presented a more comely appearance when dressed. Its disadvantages were: The surgeon, and particularly the country practitioner, did not always have the plaster with him; in hot weather the plaster was apt to excoriate and become irksome and unpleasant; and, if sufficient traction was made on the humerus to make it useful as a lever, it necessarily became tedious to bear, and the patient tired of the constant strain. However, he did not feel qualified to criticise the method very closely. Both methods had been before the profession for several years, but he had been assured by a number of his friends that they were comparatively unknown; it was on this account that he had brought them forward.

Dr. R. W. BISHOP made brief mention of a case of double fracture of the clavicle that he had recently had under treatment, in which a three-cornered piece of the bone had been broken off, was turned edgewise under the skin, and could not be kept in position.

Dr. C. E. WEBSTER had visited Bellevue Hospital last year, and had been informed by an interne that Sayre's method was employed in most instances at first, especially if the fracture was dressed in the lecture-room, but that the plaster soon became loose and gave rise to excoriation, so that other appliances, not unlike those commonly seen, were subsequently made use of.

Dr. L. H. MONTGOMERY had treated a number of fractures of the clavicle, but none of them had been compound or comminuted. In all of them union had taken place, and the patients, so far as he knew, were as strong as before the accident, although in all but two of the cases a deformity was left. One was the case of a little boy with a so-called "green-stick" fracture, and no deformity resulted. The other was that of a young man who was willing to lie abed for three weeks if the speaker could promise him a perfect result. He lay on a hard mattress for nearly that length of time, with a dressing consisting of bandages and a bag of sand applied over the seat of fracture, and a perfect result followed. The speaker would commend this method, especially in the case of a lady. He asked Dr. Wetmore if the treatment by Moore's method would apply to oblique fractures as well as to those that had been referred to in the paper.

Dr. W. L. AXFORD thought deformity almost always resulted. To raise the outer and lower the inner fragment was the correct plan of treatment, and yet more or less deformity would result. He was skeptical in regard to methods which were said to give perfect results. He asked the reader of the paper if any of the cases he had treated by Moore's method had resulted in deformity.

The PRESIDENT had seen the case of comminuted fracture referred to by Dr. Bishop. What the reader of the paper had called Moore's method was the same as was known here as Isham's. It gave as good results as any, unless it were a plaster-of-Paris bandage. He had long since abandoned the adhesive-plaster method, and thought the let-alone plan was about

as good as any. Nature would bring about a good result, although it would be well to try to maintain apposition by a tight-fitting knit shirt.

Dr. A. B. STRONG thought the subclavius muscle had something to do with the deformity, for it was irritated and excited to contraction. He had never seen any dressing prevent deformity, and he thought the best plan was simply to put the arm in a sling or have the patient lie on a hard mattress.

Dr. W. H. CURTIS referred to the danger of producing constriction of the brachial artery if the plaster dressing was applied too tight or kept on too long.

Dr. WETMORE closed the discussion, and stated that he had treated a great many cases in children, in adult females, and in men during the past twenty-five years. In those cases treated by the method he had advocated most urgently there had been no deformity, although many of the patients had been strong, athletic men.

Rhinolithiasis, with the Report of a Case of probably Forty Years' Development.—Dr. JEFFERSON BETTMAN exhibited a specimen and read an elaborate paper on this subject, of which the following is an abstract: On account of its illustrating the features of this somewhat rare affection very well, the case was first related. The patient was a gentleman, forty-nine years old, who consulted the reader in June, 1883, for what he termed "chronic catarrh in the head," extending over a period of many years. Shortly before he consulted Dr. Bettman the annoying symptoms had become more aggravated. The usual discharge was so copious as to make the use of from four to six handkerchiefs necessary daily. Periodical attacks of hemi-crania, extending over the right orbital and temporal regions, also complicated the case. There was marked obstruction of the nasal respiration on the right side. The patient was a large, well-proportioned man, the picture of florid health. The nose appeared congested and slightly tumefied, and the borders of the nostrils were somewhat excoriated. The introduction of the nasal speculum occasioned violent attacks of sneezing. This exquisite over-sensibility of the mucous membrane quite precluded a thorough examination of the nares. There was moderate fetor of the expired breath, yet sufficient to be imparted to the nasal secretion; the latter was also viscid and slightly flocculent, and filled both nostrils; it required to be removed before a survey of the parts could be made. On illuminating the nares, a marked vascularity and thickening of the mucous membrane were noticeable. The tissues covering the inferior turbinated bones were so thickened as to encroach upon and nearly obliterate the respiratory channel. The mucous membrane covering the septum presented almost a fungous appearance, and both middle turbinated bones were so enlarged as to press upon the septum. The posterior part of the right nasal fossa was filled with an accumulation of creamy-looking discharge, and attempts at its removal by a well-directed stream of tepid water were futile. The nasal lumen was so narrowed and encroached upon by the hypertrophied turbinated bone and a co-existing deflection of the septum that it was with difficulty that a cotton-wrapped probe could be guided through the parts which were so sensitive. Palpation revealed the presence of a hard, grating substance occupying the floor of the right nasal fossa, which was supposed to be bone necrosed as a result of a dyscrasia. Thorough inquiries elicited negative replies in regard to that matter.

To allay the morbid sensibility of the parts, a detergent nasal lotion was advised for the time being. In two days' time this proved effectual, as the over-sensibility and tumefaction of the mucous membrane were markedly reduced. Under a strong illumination, the position of the foreign body was then defined, and it was found to be lying on the floor of the nasal fossa in

its posterior half, apparently impacted between the bony septum and the inferior turbinate bone. The exposed surface of the body was rough, uneven, and unyielding to the touch of the probe. To dislodge and remove it, a strong aural forceps, bent at a right angle, was used. Firm resistance was met with on traction being made. The fauces, too, were uncontrollably irritable, defeating all attempts at posterior rhinoscopy. The size of the body had undoubtedly been underestimated. Its removal *in toto* anteriorly was impossible, on account of the narrowness of passage. Attempts at removing it piecemeal were but partially successful after repeated trials. The feasibility of removing it through the naso-pharyngeal space presented itself. The patient having been cautioned not to take a deep breath or swallow during the manipulation, the operator guarded the faucal orifice and forced the foreign substance into the naso-pharyngeal space, from which in a moment the gentleman spat it out. It was darkish gray, almost black in color, conoidal in shape, and of a very disagreeable odor. Its weight, its firm consistence, and the pebble-like uniformity of its unexposed surfaces were sufficient to indicate its calcareous constitution. Irregular in shape, its contours conformed to those of the surrounding parts. Its median surface measured 1.5 cm. in length by 1.25 cm. in breadth. The inferior surface was 1.5 by 0.5 cm. The exact weight was a gramme and a half. Imbedded in the mass was a cherry-stone. The incidents of his childhood were vividly impressed upon the patient's memory, but he could not account for the presence of the cherry-stone. Free nasal respiration was fully restored, and great relief followed. Subsequently, however, a small mucous polyp was discovered high in the same nostril, covered and almost hidden by the middle turbinate bone. It was easily removed.

The literature of the subject of rhinolithiasis was then reviewed by the reader at great length. Störk averred that he had seen but one example of the affection. In many works on general surgery no mention of it was made. The term was first applied by Demarquay, and our French *confrères* had described the greater number of cases. Demarquay and Poinso had written *brochures* on the subject. The determining cause was the presence of a foreign body, which formed a nucleus for the deposition of lime salts. Nasal concretions had, however, developed independently, without being due to the presence of any extraneous substance. Congenital or acquired atresia and stenosis of the nasal lumen favored the retention and subsequent desiccation of nasal secretions, and furnished the nidus for a concretion. A gouty diathesis might also be a predisposing cause. Virchow had described a diathesis *ossifica*, which was an entirely different process, yet somewhat allied to the affection under consideration.

During an act of vomiting or retching, undigested particles of food, being forced through the naso-pharyngeal space and lodging in the posterior nares, might be the nidus. Barring this possibility in the case related, the concretion might be presumed to have been more than forty years in developing. Jacquemart had lately described a case in which the trouble had existed over twenty years. Multiple rhinoliths had been found in rare instances. The concentric arrangement of the constituents of these concretions and their chemical composition were next considered. The symptoms occasioned by their presence were frequently not marked, so that doubtless they were often overlooked, the rhinorrhœa being regarded and treated as due to a catarrhal congestion, which might often result in epistaxis. According to Billoth, the chronic vascularity induced a state of overnutrition and cellular activity in the surrounding tissues, favoring redundancy and neoplastic changes. Hemiorrania, or nervous headache, was a noteworthy symptom in many cases. According to Axmann, the latter

might be periodical, and be checked by the spontaneous expulsion of minute concretions, and Hack had added that other reflex neuroses might also be present. Posterior rhinoscopy occasionally was of practical service in this connection. In Jacquemart's case, already alluded to, he and more than ten consultants had made a previous diagnosis of osteo-sarcoma. A few cases were on record in which rhinoliths had been expelled spontaneously while they were very small. A stream of hot water, injected through the opposite nostril, might in some cases prove effective in dislodging the concretion. According to Frankel, sternutatories were worthy of trial. The dental engine might render signal service. In the post-nasal extraction of a calculus, strict precautions must be adopted to prevent it from falling into the larynx.

The remainder of the paper contained many useful hints, both for the patient and for the surgeon, in regard to the precautions to be taken, but often neglected, in treating nasal disease.

Dr. F. O. STROCKTON remarked that the writer of the paper had omitted to mention one very simple method of removing these calculi, which consisted in making strong pressure through the posterior portion of the throat and nares, and thus expelling it through the anterior nares, which was certainly much to be preferred to removing the calculus through the posterior nares. Another method was by using a small loop of iron wire, rotating the wire upon the stone, and thus extracting it anteriorly. He then cited a case which had come under his observation, and described the method he had pursued in removing the calculus. It was irregular in shape, and had produced absorption of some of the small facial bones by puncturing or passing through them. A dental engine with a diamond drill was used to break the stone, and it was removed in this manner piecemeal. He knew of no other case ever having been treated and the stone removed in this manner. The method of boring was by drilling in different directions with a dental drill, and, as there was no pressure made, the mucous membrane and other soft tissues were not injured. This case he had treated while in London, and the engine employed was the one used by Dr. Goodwillie, of New York. L. H. M.

AMERICAN OPHTHALMOLOGICAL SOCIETY.

Twentieth Annual Session, held at the Grand Hotel, Catskill Mountains, N. Y., Wednesday and Thursday, July 16 and 17, 1884.

Wednesday's Proceedings.—Morning Session.

The meeting was called to order by the vice-president, Dr. W. F. NORRIS, of Philadelphia.

The Treasurer's Report was presented and referred to an auditing committee, which reported the accounts correct.

The Secretary and Treasurer, Dr. RICHARD H. DERBY, of New York, resigned his position, and Dr. O. F. WADSWORTH, of Boston, was elected to these offices.

Invited Guests.—By invitation, Dr. SUTPHEN, of Newark, N. J., Dr. PARROT, of Brooklyn, and Dr. ANDREWS, of Philadelphia, took seats with the society.

Iridectomy in Chronic Iritis.—In a paper with this title Dr. HASKET DERBY, of Boston, related the case of Miss D., aged sixty, who had suffered from many attacks of recurrent iritis. These were relieved readily by the use of atropine, but their occurrence could not be prevented except by the continuous use of atropine. She finally passed into other hands and glaucoma was diagnosed. Iridectomy was then performed on both eyes. The attacks of iritis gradually became less frequent after the operation. Dr. Derby did not consider this a proof of the

beneficial effect of iridectomy, but was disposed to attribute it to the gradual wearing out of the disease.

Dr. H. KNAPP, of New York, said that in many cases the attacks of iritis subsided spontaneously. He would not perform iridectomy in ordinary genuine iritis, but where there was, in addition to inflammation of the iris, a tendency to cyclitis and glaucoma, he considered the operation indicated.

Cases of Restoration of the Eyelid by Transplantation of a Flap without a Pedicle, by Wolfe's Method, was the title of a paper by Dr. CHARLES S. BULL, of New York, in whose absence it was read by the secretary. The histories of three cases of great eversion of the lids, the result of cicatrization following burns, were given. In two of them the upper and in one the lower lid was the part affected. The adhesions were loosened, the surface was freshened, and a flap, removed in two cases from the forearm and in the third from the anterior wall of the chest, was applied to the raw surface and confined in position with as many sutures of fine black silk as were necessary. Over this was placed a dressing of goldbeater's skin, iodoform gauze, and borated cotton, the whole being held in place with a bandage. The dressing was not disturbed for three or four days. In the case in which the lower lid was operated on there was sloughing of the epidermal layer of the flap, but in all the cases great improvement was effected.

A Successful Case of Skin Transplantation, without a Pedicle, to the Lower Lid after Removal of an Epithelioma, was the title of the next paper, by Dr. B. E. FRYER, of the army. The epithelioma had existed one year and was steadily extending. It was removed by excision, and, after the lids had been fastened together with two sutures, the gap was filled with a flap removed from the forearm and prepared in the usual way. No stitches were inserted in the flap, but it was held in position with gold-beater's plaster, which was applied moistened and pressed into all the inequalities. Two layers of plaster were applied. When they became dry, they formed a firm splint and kept the edges in perfect coaptation. The patient was exposed to cold after the operation, and, to protect the wound, a pad of cotton was applied, but this was removed on the patient's arrival at her home. On the eighth day after the operation the plaster was removed and union found to be perfect. Three months afterward there had been little contraction.

A Case of Gangrene of the Lids, with Subsequent Restoration of Tissue without Plastic Operation was reported by Dr. RICHARD H. DERRY, of New York. Two weeks before coming under observation the patient noticed a small black discoloration. This was followed the succeeding day by swelling of the face. When he was first seen, the upper lid was in a sloughy condition. The patient was lost sight of for a month. When he returned, it was found that the skin had reproduced itself and that there was little deformity, the patient having incomplete control of the lid.

Hysterical Unioocular Blindness with Mydriasis and Blepharospasm was the subject of a paper by Dr. GEORGE C. HARLAN, of Philadelphia. The patient was treated in different ways for some time. Finally a Charcot magnet was applied, to see what effect it would have on a severe spasm of the face which was present. It relieved the spasm and also produced improvement in the sight. The experiment was repeated several times, and always with the same result. It was then decided to try the effect of an imitation magnet made of wood. With this the results were even better than with the real magnet. An hysterical affection of the elbow joint, which followed a fall during the course of the treatment, was also successfully treated with the imitation magnet.

Neuro-retinitis with Fulminant Blindness.—Dr. KNAPP, in a paper with this title, related the case of a gentleman, with

no constitutional disorder, who suffered, on May 3, 1883, with severe headache and nausea. The following night he slept well, but the next morning, on awakening, found that he could not see. The only abnormality which could be discovered was suppression of urine. The catheter was introduced and only half an ounce of urine withdrawn. Ophthalmoscopic examination showed well-marked choked discs in both eyes. Examination of the urine showed the absence of albumin, sugar, and casts. The most probable explanation of the attack was uræmia, and in this a number of prominent physicians concurred. Diaphoresis was induced by the administration of salicylate of sodium and calomel. This treatment was continued, and gradually the quantity of urine increased. Two months after the occurrence of the blindness the patient said that he could see a little. His ability to see became more marked, and at last he was able to make out large letters and see the pictures on playing cards so as to distinguish one from another at a distance of two feet. The object had to be held in a certain position and at some distance from the eye. There had been no further improvement in vision. It was thought that the probable explanation of this case was the occurrence of some cerebro-spinal lesion or of some difficulty about the chiasm in the frontal lobes of the brain.

Another case was related, which was that of a little girl aged twelve years. For two days there were short attacks of dimness of vision. She then, on awakening one morning, found that she was unable to see with the left eye, and by noon the right eye was also blind. Examination of the eyes showed both pupils to be immovable. Both discs were swollen, the arteries small, the veins large but easily emptied by pressure, which caused the arteries to pulsate. Diaphoresis and diarrhœa were induced by the use of salicylate of sodium and calomel. In two days there was slight perception of light, and from this time improvement was rapid. In two months the vision was normal.

Dr. Knapp thought that there might have been some cause of pressure about the optic chiasm or the cavernous sinus which was removed by the free discharge from the bowels.

Dr. CHARLES J. KIPP, of Newark, N. J., said that he had always been taught to attribute optic neuritis to a cerebral lesion, but some cases which he had seen had led him to the opinion that the condition might sometimes be referred to other causes.

Dr. KNAPP called attention to the fact that there might be serious disease of the frontal lobes of the brain continuing for a long time without producing any alarming symptoms.

Dr. HARLAN stated that he had examined a large number of inmates of asylums for the blind, many of whom had atrophy of the optic nerves and yet were in excellent health.

Dr. A. ALT, of St. Louis, had seen a case of optic neuritis in which there were very serious general symptoms, the patient's life being despaired of. The trouble was attributed to a brain tumor. Large doses of iodide of potassium were administered and the child entirely recovered her health. Atrophy of both optic nerves remained.

Hereditary Atrophy of the Optic Nerve.—In a paper with this title the VICE-PRESIDENT gave the history of a family of twenty-three persons, of whom fourteen suffered from this affection. He also exhibited a number of charts showing the results of testing their appreciation of color, and the extent of the visual field in the different cases. The treatment, which consisted in the use of corrosive sublimate and strychnine, had proved of no service, only one case showing any improvement under the use of these drugs.

Two Cases of Orbital Tumor was the title of another paper by the VICE-PRESIDENT. The first was one of myxo-

sarcoma occurring in a child four months old. The growth was removed, but returned. It was again operated on and the actual cautery was applied, but it again appeared. At the present time the child was said to be very ill, suffering with a bloody diarrhoea.

The second tumor was an osteoma of the orbit. It developed in a woman thirty-two years of age. The sight of the eye had been lost before the development of the tumor. In operating on the growth, it was found that it extended so far back that the eyeball would have to be removed. This was done and the tumor was chiseled away. The woman recovered, and there had been no return of the disease.

Jequirity was the title of a paper by Dr. J. A. ANDREWS, of New York. He thought that the ordinary method of using the drug was not a good one. He then described his plan, which was to prepare a cold one-per-cent. infusion of the bean. This was brushed over the conjunctiva. The patient was to be examined again on the following day, and the application repeated as often as required.

The VICE-PRESIDENT, in a case in which he had employed the infusion of jequirity, had found that after a time the membrane lost its susceptibility to the action of the remedy.

Dr. H. S. SCHELL, of Philadelphia, did not consider it so important to use a fresh preparation. He had employed with success an infusion which had been made several weeks. Its activity had been preserved by the addition of four grains of boric acid to the ounce.

Dr. WADSWORTH had used an infusion to which two per cent. of carbolic acid had been added. This preserved its virtues.

Dr. J. S. PROUT, of Brooklyn, had called the attention of the society some years ago to the use of quinine in the affections for which jequirity had been recommended. He had reported two cases in which good results had followed the use of this remedy. Its use was not attended with the same dangers as that of jequirity.

An afternoon session was held at four o'clock to enable the society to examine a number of microscopical specimens prepared by Dr. ALT. At the same time Dr. E. DYE exhibited and explained a new form of perimeter.

(To be concluded.)

AMERICAN OTOLOGICAL SOCIETY.

Seventeenth Annual Meeting, held at the Grand Hotel, Catskill Mountains, N. Y., Tuesday, July 15, 1884.

Morning Session.

THE meeting was called to order by the vice-president, Dr. J. S. PROUT, of Brooklyn.

The Business Committee.—The following-named gentlemen were appointed to serve on the committee: Dr. F. B. LORING, Dr. E. W. BARTLETT, and Dr. A. ALT.

The Treasurer's Report was read and referred to an auditing committee. Dr. THOMAS ANDREWS, of Philadelphia, was then introduced to the society as a guest.

On the Indications for opening the Mastoid Process, based on some Recent Observations.—Dr. H. KNAPP, of New York, read a paper with this title, in which, after referring to his former disinclination to operate when there were no external signs of suppuration, and when, in acute otitis media, there was free discharge through the external meatus, he stated that he had changed his opinion on these two points, and now considered the operation indicated in certain cases in which the membrana tympani was intact and no suppuration or collection

of fluid was to be looked for in the tympanic cavity or the mastoid cells. He then related three cases illustrating the value of this operation in different conditions. The first case was one of acute tympano-mastoiditis, in which rapid recovery followed after opening of the mastoid cells and the liberation of a great quantity of pus. The second case was one of chronic suppurative tympano-mastoiditis, with chronic unilateral headache, in which relief followed the operation. In the third case there was sclerosing mastoiditis, with the membrana tympani intact, and with constant severe headache. In this case opening of the mastoid cells gave complete relief. The reader then described his mode of operating, which consisted in making an incision one cm. from the insertion of the auricle, making the perforation, when there was no special reason for choosing some other point, at the depression behind the upper level of the meatus. For opening the cells he used only the chisel, and made the opening oblong with its greatest diameter vertical. The canal thus made ran in the direction of the canal of the ear. If it was desired to have the wound heal by first intention, it was united with a continuous suture of fine black silk. If suppuration set in in a few days after the operation, the wound was syringed with a solution of chloride of sodium or of boric acid. When suppuration and putrefaction were present, before or after the operation, iodoform powder was employed.

Mastoiditis Interna Chronica with Sclerosis; Trephining; Recovery.—Dr. J. A. LIPPINCOTT, of Pittsburgh, Pa., read a paper in which, after remarking that the literature of this affection was so meager that the report of another case might not be without interest, he related the following case:

Miss N., aged nineteen, presented herself March 15, 1883, complaining of moderately severe pain which had lasted several months. There was no history of nasal or throat trouble. Her previous health had been good and her family history was excellent. A watch was heard on contact with the auricle. On removing a quantity of wax found in the canal, the latter, together with the membrana tympani, was found unusually red and irritated, and the hearing was but slightly improved, $h = \frac{1}{16}$. The left ear was normal. The naso-pharynx was slightly catarrhal. The middle ear was easily inflated. A solution of boric acid and sodium biborate was directed to be instilled several times daily, and the patient was requested to return if the pain did not subside entirely.

Five weeks later the pain, which had been but partially relieved by the removal of the cerumen, and the subsequent application, became greatly intensified, being referred partly to the region of the middle ear and partly to the mastoid process, occasionally shooting over the whole side of the head. There was considerable swelling and tenderness over the process and below it. The external canal was diminished in caliber. There was no congestion of the membrana tympani. The typical light cone was absent, but the anterior two thirds of the membrane showed a silvery luster. The Eustachian tube was pervious. There was slight febrile disturbance. Free leeching, poultices, and, internally, the mild chloride and a febrifuge mixture caused the acute manifestations to subside quickly.

April 28th.—Her condition was as follows: Constant dull pain in the mastoid and deep in the ear. No swelling. Membrana tympani as before. Hearing $\frac{1}{16}$. A tuning-fork applied to the vertex was heard best on the affected side. During the succeeding months the pain gradually increased in intensity, and became more localized in the mastoid region—never over the side of the head. Hearing slowly failed till the watch was heard only on firm pressure. No cerebral symptoms and no swelling occurred at any time. The treatment consisted of blisters, tincture of iodine, various ointments, incision, etc. Internally, alterative, roborant, and anti-neuralgic remedies were

given in various forms. As time wore, on the long-continued suffering began to produce nervous debility and mental depression.

March 20, 1884.—The patient was etherized, and an incision an inch and a half long was made half an inch behind the auricle. The periosteum was firmly adherent. Buck's drill was applied at the usual point and an opening was made 17 mm. in depth. The osseous tissue was dense and ivory-like. No mastoid cells were encountered. A carbolyzed tent was inserted and a poultice applied. The pain was at once greatly diminished, and in a few weeks disappeared entirely. The opening closed May 16th. Three weeks later, owing to exposure and fatigue, there was a slight return of the pain, which, however, promptly subsided on the application of an ointment of belladonna and the yellow oxide of mercury.

July 8th.—The patient was perfectly free from distress, and the hearing had improved to $\frac{3}{5}$.

Dr. ALBERT H. BUCK, of New York, considered it unwise to try to secure union by first intention after operation on the mastoid process, as had been suggested by Dr. Knapp. The operation did good by favoring drainage and exciting irritation.

Dr. KNAPP stated that the only case in which he had attempted to secure union by first intention was one in which the lateral sinus had been opened.

Dr. C. J. KIPP, of Newark, N. J., reported a case in which, while there were no external evidences of disease, an exploratory incision down to the periosteum revealed caries of the bone one inch back of the attachment of the auricle. As soon as the operation was performed, relief from the symptoms was obtained.

Dr. SAMUEL THEOBALD, of Baltimore, had employed constitutional treatment in these cases with decided benefit, such treatment often curing the disease without operation. Among the remedies particularly recommended were biniodide of mercury and iodide of potassium.

Dr. SAMUEL SEXTON, of New York, stated that in many of these cases spontaneous cures occurred, and he exhibited photographs illustrating such cases. Pain alone did not constitute sufficient evidence of involvement of the mastoid cells. In some of the cases in which eburnation was said to have occurred, the condition met with might have been due to the fact that the perforation had been made near the canal, where the bone was naturally denser than in other situations.

Dr. W. W. SEELY, of Cincinnati, described a case of severe pain in the mastoid region, with suppurative of rather long standing, associated with facial paralysis. It was thought that an operation was indicated, but before its performance a twenty-grain dose of quinine was given, after which the pain disappeared and had never returned.

Dr. J. A. ANDREWS, of New York, considered the presence of optic neuritis or swelling of the optic disc an important indication for the operation, and cited cases in which, guided by this condition, in the absence of other indications, he had performed it with decided benefit.

Dr. ARTHUR MATHEWSON, of Brooklyn, did not consider the operation advisable in sclerosis.

Dr. B. E. FRYER referred to the importance of operating before the patient became so debilitated as to make the occurrence of pyæmia after an operation very probable.

Dr. J. A. LIPPINCOTT spoke of the use of alteratives and anti-neuralgic remedies in the treatment of these cases.

Dr. BRUCE said that, in considering such cases, the first question he decided was whether the mastoid disease had developed as an acute trouble in a person previously in good health, or whether it had developed in one who had been suffering from a chronic discharge from the ear. Having settled this point, the

next was whether or not there was a sufficiently free exit for the discharge. In chronic cases there might be serious disease of the mastoid cells without marked external symptoms. If in a chronic case the opening for the discharge of matter was not adequate, the mastoid process should be opened. In the acute cases there was more room for discussion, but it was considered good surgery to operate on the mastoid. He thought that drainage could be accomplished more satisfactorily through such an opening than through the meatus.

Dr. SEXTON advocated drainage through an opening made from the external meatus.

Remarks on the Use of Large Doses of Iodide of Sodium or Iodide of Potassium in Cases of Rapid Loss of Hearing supposed to be due to Syphilitic Disease.—Dr. BRUCE read a paper with this title. After referring to several cases which had been reported by others, in which benefit had followed anti-syphilitic treatment, he described a number of cases treated by himself with large doses of iodide of potassium and of sodium, in the majority of which no improvement had occurred, while in one or two there had been slight temporary benefit. The doses of the iodide ranged as high as 525 grains a day in one case.

A number of other cases were reported by the members in which this treatment had failed to produce benefit.

Dr. SEXTON thought that in the severe cases relief was not obtained by any plan of treatment, and that in those cases amenable to treatment benefit would be produced by moderate doses of anti-syphilitic remedies continued for a moderate time.

Dr. BRUCE had reached a similar conclusion. The probable reason why these cases were so little affected by treatment was that the syphilitic gumma, or whatever it might be, which caused the trouble had so pressed on the labyrinth as to destroy the part with which it came in contact, so that, although the gumma might be absorbed, the part was so injured that it did not regain its function.

Evening Session.

The Education of Deaf-Mutes was the subject of a communication from Professor F. E. CLARKE, which was presented by the secretary. Dr. Clarke was invited to present his paper to the society.

The Treatment of Suppurative Otitis Media with Jequirity.—Dr. W. W. SEELY, of Cincinnati, read a paper in which he said that we had had time now to recognize the shortcomings of the latest contribution to our treatment of chronic suppurative inflammation of the middle ear, and boric acid had its shortcomings along with the entire catalogue of remedies and plans. Each year established on a firmer and broader basis the necessity of fulfilling certain conditions in order to obtain the greatest success in this class of cases: first, *cleanliness*; second, *rendering and maintaining the Eustachian tubes patulous*; and third, *getting the naso-pharynx into a healthy state*. He was satisfied that this last point was too little regarded by some and utterly ignored by many. He called attention to the fact that the mucous membrane of the tympanic cavity got into such a state that practically it could only be relieved by changing it into cicatricial tissue—a condition analogous to the state of things we found in trachomatous inflammation of the conjunctiva. This condition of the conjunctiva had recently been combated by means of exciting an inflammation of considerable violence with infusion of jequirity. For a year or more he had been treating certain long-standing cases of suppurative otitis media by exciting an additional substitutive inflammation with jequirity, using a small quantity of the preparation made for the eye. He was inclined to think that such inoculation was capable of playing an important rôle under certain conditions:

When there was extensive destruction of the membrana tympani; when there was a great amount of thickening of the mucous membrane, thus rendering other plans futile or tedious; and when there was a patulous Eustachian tube—a condition for regulating the inflammation.

Disease of the Ethmoid, the Consequence of Chronic Catarrh of the Naso-Pharynx; Exophthalmus.—Dr. J. J. B. VERMYNE, of New Bedford, Mass., read a paper in which he related the case of a healthy-looking young lady of sixteen, who had a slight protrusion of the right eye, which had been observed for some time. The eye was pushed forward and outward. There was neither swelling of the lids, dilated veins, nor conjunctival redness or pain. The optic disc was slightly raised, and the retinal vessels were distended. Vision in both eyes = 1; slight H. on the right side. For a few days she had been complaining of headache. She had in general enjoyed good health, with the exception of chronic naso-pharyngeal catarrh, especially on the right side, which had troubled her since her fifteenth year, when she had a severe attack of scarlet fever. There was no interference with the movements of the eyeball or with binocular vision, with the exception of slight diplopia on awaking in the morning, which passed off quite rapidly. A neoplasm was suspected in or around the nerve, and no treatment was advised in consequence. The headache passed away and, with the exception of the slight deformity from the protrusion, she felt entirely well. It occurred to the writer that after all the disease might not be a neoplasm in or around the nerve, and, after making another careful examination, found that there was a tumor of bony hardness, slightly nodulated and immovable, stretching from the upper inner corner of the eye to a little below the ligamentum canthi internum, and distinctly connected with or originating from the os planum. The disease was then referred to the naso-pharyngeal catarrh, and treatment was advised accordingly. The writer believed this case to be one of retention tumor, a case of which was reported by Dr. Knapp at the International Ophthalmological Congress in 1876. This belief was based especially on the fact that the patient's mother told the author afterward that frequently she had observed a peculiar appearance of the eye which she compared to a "lobster eye," but which disappeared after some days. Dr. Knapp's patient was successfully operated on with a chisel and hammer—an operation which was by him advised in all cases of this kind, whether of exostosis or of retention tumor. Another case of Dr. Knapp's was quoted from the "Archives of Otolary" for April, 1884, where the operation was performed and the patient died from traumatic meningitis. The predisposing cause of this condition was found in a disease of the osseous walls of the frontal sinus, the exciting cause being the surgical interference. The writer, reviewing the conclusions drawn by Dr. Knapp from this last case, believed that it became pertinent to ask what constituted a perfectly healthy pneumatic cavity, and whether some participation of the bone in the neighborhood of the tumor could not with more or less reason be suspected. Also, in view of the lesser danger which might attend simple mechanical distension of the bone, whether an exploratory puncture with a trocar, as advised by other writers, might not become imperative in place of being unnecessary, as Dr. Knapp had stated in the report of his first case, and whether in tumors of this kind, when not endangering the eye and not of inconvenient size, it would not be better to leave them alone, as advised by other authorities.

Dr. KNAPP stated that many of these cases were due to nasal polypi.

Dr. KIPP, of Newark, N. J., reported the case of a patient who had died of pneumonia eleven days after operation, in which the frontal sinus, the ethmoid cells, and the sphenoidal

sinus were filled with polypi. In another case he had succeeded in relieving the difficulty by pressure with the finger.

Myxofibroma from the Basis Cranii causing Blindness and, Seven Years later, Complete Deafness by Destruction of the Labyrinth.—Dr. VERMYNE read an account of a case which was first seen in January, 1876, when there was a complaint of occasional dimness of vision and fatigue of the eye. Vision $\frac{1}{16}$. There was no other complaint. The optic disc and the retinal vessels were slightly congested. At the end of April of the same year severe headache and optic neuritis developed. Under the administration of large doses of bromide and iodide of potassium and the use of Heurteloup's artificial leech, improvement set in, but the writer then lost sight of the patient. She was seen again five years later, when both discs showed secondary atrophy. Two years afterward she became deaf, but at the end of six weeks she began to hear as well as before; then hearing gradually disappeared, and in May, 1884, the patient died, nearly eight years and a half after the first observation by the writer. At the autopsy a tumor was found, 6 cm. long, 4 cm. wide, and 2 cm. thick, in the left inferior occipital fossa, which had compressed the left cerebellum to one third its normal size. Both the brain and the cerebellum were anæmic, and the latter of increased consistence. There was much fluid in the ventricles. The most recent part of the growth had impinged upon the petrous portion of the left temporal bone, causing the entire destruction of the bone between the posterior wall and the tympanic cavity, which was opened. The tumor was a myxofibroma. The writer believed the first indications of the tumor to have been the eye symptoms, occurring before any other complaint; that probably the tumor originated from the dura mater, and that its effect upon the organs of sight and hearing was due absolutely to interference with the circulation from mechanical pressure.

Epithelioma of the Auricle.—Dr. KIPP described a case of this sort. It occurred in a healthy boy of nineteen. It appeared one year before the case came under observation. The concha was the seat of a small fleshy growth, with a granular surface. On the upper part of the auricle there were several boils, and below the ear was an enlarged gland. The hearing was not impaired. The diagnosis of granuloma was made, and its removal was advised. This was done, the whole growth being thoroughly removed with a sharp spoon. The wound healed completely in about a week. At this time a furuncle developed in the external canal, and others appeared under the ear. Since then the patient had not been seen. Microscopical examination of the growth showed it to be made up largely of epithelial cylinders. The stroma was very vascular.

Dr. Kipp demonstrated also a specimen of a cavernous fibrolipoma which he had removed from the upper part of the auricle of a man thirty-five years of age. The growth had existed for several years, but had not grown much until a month before he saw the patient. The tumor, which was of about the size of a hickory-nut, was removed by excision. There was but little hæmorrhage, and the wound healed kindly. Microscopically, the tumor was found to be a lipoma, with considerable fibrous tissue between the lobules, and these had undergone cavernous metamorphosis. Growths of this kind were believed to be rarely found in this locality. Dr. Kipp showed also a very large atheromatous tumor which he had removed from the helix.

Hæmatoma Auris.—Dr. L. Howe, of Buffalo, described a case, in a woman of twenty-eight years of age, which had been relieved by the hypodermic injection of ergot, and he presented plaster casts showing the condition of the ear at different stages of the treatment. He thought, however, that the same result might have followed the injection of other agents.

Dr. SEXTON presented a number of photographs illustrating

othæmatoma. He referred to the frequent occurrence of this condition among pugilists, in whom it was produced by blows on the ear. In them it was almost invariably on the left side. He thought that othæmatomata in the sane were always the result of injury, and that in the majority of instances in the insane it was due to the same cause.

Dr. HOWE thought that some other cause than injury must be looked for in these cases.

Dr. SEXTON presented the report of a case of sarcoma of the auricle, also a number of photographs illustrating various malformations of the auricle. He then exhibited several plaster casts of the mouths of patients who were suffering from aural troubles which were referable to dental irritation. He likewise referred to the use of peroxide of hydrogen in the treatment of aural inflammations. He had used it with advantage.

Necrosis of the Right Labyrinth; Total Facial Paralysis on the Same Side; Partial Recovery.—A paper on this subject, by Dr. CHARLES A. TODD, of St. Louis, was read by title. We are permitted to publish the following abstract of the paper: The patient was a girl, nineteen years old, who, when four years of age, had had measles, followed by a discharge from both ears, which had persisted up to the time of her attendance at the clinic, four years later. Under treatment, the left ear ceased to discharge, and the perforation healed. As was common with out-patients, she attended only when the disease was annoying, so that the right ear, although at times nearly well, was not allowed to become entirely relieved of the suppuration. In November, 1882, Dr. Todd was asked to visit her, and found her suffering from severe deep-seated pain in the mastoid region, but without any external redness or swelling. This pain had been increasing gradually for thirty days. After three days of treatment with hot applications and anodynes (operation on the mastoid not seeming justifiable), the pain ceased, and total paralysis of the right side of the face became manifest. A year afterward, when she was seen at the clinic, granulations were protruding through a perforation in the upper posterior quadrant of the right membrana tympani, but no dead bone could be detected. The patient disappeared after these granulations had been got rid of. In March, 1883, a part of the cochlea was removed in a state of necrosis, and soon after, under the dry method of treatment, the ear ceased to discharge. The paralysis was complete, and, in view of its cause, of course the prognosis was not hopeful. The continuous galvanic current was applied irregularly and cautiously—more to satisfy the patient than for any other reason, and after that, under the use of the faradaic current, the distorted mouth and the partially closed eyelids were brought into more tolerable condition, as some will-power developed. Since the beginning of spring the battery-current had been used three times a week, with evident improvement of the innervation of some of the facial muscles, while others remained irresponsive. The corner of the mouth could be drawn well back and raised somewhat, and it could be fairly puckered as if to whistle. The lids could be closed, but not with the natural degree of force. Evidently the facial nerve was partially restored in some of its fibers.

Reflex Aural Phenomena from Naso-pharyngeal Catarrh; Objective Noises in and from the Ear.—A paper with this title, by Dr. C. H. BURNETT, of Philadelphia, was read by title. We are allowed to give the following abstract:

The author described three cases of objective snapping noises in and from the ears, which could be heard at varying distances from the patient. These noises occurred in subjects of naso-pharyngeal catarrh, and it was held by the speaker that they were due to clonic spasms in the muscular structures of the naso-pharynx, induced by the irritation reflected from the inflamed mucous membrane covering or in the vicinity of the mus-

cles involved. The muscles affected in the cases reported were the levator palati, the superior constrictor of the pharynx, near the Eustachian tube, and the pterygoid muscles. When the latter muscles were the seat of spasm the noises were heard in both ears, and the lower jaw was moved from side to side each time the noise occurred. In two of the cases the sounds could be heard ten or twelve feet from the patient. In these cases the muscles involved were the levator palati and the pterygoid muscles. In the case in which the superior constrictor muscle was the seat of the spasm the sound could only be heard by means of the auscultation-tube. It was, however, distinctly audible to the patient. The production of these objective sounds was explained by the irritation of the sensitive nerves in the inflamed area, the conveyance of the irritation to the motor nerves of the tract, and the resultant endeavor of the muscles underlying the inflamed mucous membrane to throw off the irritant. That this was the correct explanation was shown by the fact that in two cases the noises disappeared when the catarrhal symptoms were relieved. The case in which the pterygoid muscles were implicated is still under treatment. So far as Dr. Burnett was aware, he was the first to suggest the cure of objective noises in and from the ear by treating the naso-pharyngeal catarrh which was the reflex cause of their occurrence.

A paper entitled "**A Simple Device for the Treatment of Nasal and Post-nasal Inflammations, and on the Importance which attaches to such Conditions of Inflammation as they are related to the Ear,**" by Dr. H. N. SPENCER, was read by title and referred to the Committee on Publication.

The Education of Deaf-Mutes.—Professor CLARKE's communication, asking for certain information which might be of service, in the education of deaf-mutes, was referred to a committee of three, the president of the society to be the chairman of the committee.

New Instruments were shown by Dr. THEOBALD, Dr. SEXTON, and Dr. ANDREWS.

New Members.—In executive session the following new members were elected: Dr. E. D. SPEAR, JR., of Boston, Dr. JOHN VAN DYKE, of Syracuse, N. Y., and Dr. S. O. RICHEY, of Washington.

Officers for the Ensuing Year were then elected as follows: President, Dr. C. H. BURNETT, of Philadelphia; vice-president, Dr. J. S. PROUT, of Brooklyn; secretary and treasurer, Dr. J. J. B. VERMYNE, of New Bedford, Mass.; Committee on Publication, Dr. VERMYNE, Dr. C. J. BLAKE, and Dr. J. O. GREEN; Committee on Membership, Dr. JOHN GREEN, Dr. H. G. MILLER, and Dr. H. D. NOYES.

It was voted to hold the next meeting at the same place with the annual meeting of the American Ophthalmological Society, and on the day before the meeting of that society.

COLLEGE OF PHYSICIANS OF PHILADELPHIA.

Meeting of June 4, 1884.

On a Form of Numbness chiefly of the Upper Extremities.—Dr. WHARTON SINKLER read a paper with this title. For several years he had observed in his service at the Infirmary for Nervous Diseases, and occasionally in private practice, quite a large number of patients whose prominent symptom was numbness of the hands. The symptoms were quite regular and constant in their general characters. The patients were usually women—at about the change of life—although cases occurred in men. The numbness generally began in one or both hands and gradually extended up the arms. It might be felt in the feet and legs also. It was almost always most marked in the

morning before the patient rose. It was described as a "tingling," and "like pins and needles," or as if the limb "were asleep." One patient, in whom the numbness was felt in both upper and lower extremities, said she felt like "a sleeping fool." Notwithstanding the numbness, there was but little loss of feeling to touch or pain, and usually the compass points were distinguished as readily in the affected part as in other portions of the body. The numb member was weak, but there was no paralysis, and the weakness was transient. Often there was pain associated with the numbness. The patients sometimes thought the hands were swollen at the time when the numbness was most marked.

It must be borne in mind that he did not consider all cases of numbness as coming under this head. There were many which did not depend upon organic lesions of the nervous centers and yet differed from those which he was considering.

Brief notes were then given of nine cases. Of the female patients whose cases were given, their ages were between forty-eight and sixty years, with the exception of one who was thirty years. In this case the disorder was induced by the nature of her work, which was constant and hard sewing. The ages ranged as follows: one aged thirty years; one, forty-eight; three, fifty; one, fifty-one; one, sixty. In two patients there were evidences of rheumatism, but in none of the others were there any symptoms of rheumatic trouble. In three the origin of the trouble seemed to be in overuse of the limb first affected. Indeed, in one case the affection at first seemed like a low form of ascending neuritis, but afterward the symptoms were more general. Most of the patients were in good general health, but some were anæmic or overworked.

The numbness in most instances was in both arms, occasionally it was found in all of the limbs, and in three cases in one arm alone. The ulnar and median distributions were most frequently affected. Pain was associated with the numbness in several patients. It was not an acute pain like neuralgia, but, as one patient expressed it, like the pain when a limb was getting over being asleep. Tenderness over the ulnar or median nerve was observed several times. There was usually some loss of power in the parts involved, the dynamometer showing several degrees difference between the hands when only one limb was affected. The duration of the affection was from a few months to several years. One of the patients had suffered from the disorder for two years before coming under observation, and at the end of a year and a half still had occasional attacks.

Dr. Weir Mitchell, in a lecture on "The Symptom Numbness,"* and afterward in a chapter in his work on "Diseases of the Nervous System," had described several varieties of numbness. Most of his cases were in anæmic or hysterical persons, and the symptom yielded under a course of treatment which tended to improve the nutrition and the *morale*. He referred to cases in which the numbness came on during sleep, and remarked that this was a form which belonged to the night. He found that the numbness in the cases he had seen was frequently hemiplegic in character, and alluded to the fact that some persons who had got pretty well of a hemiplegia of organic cause were liable to wake out of sleep with numbness and lessened power of the side once palsied.

Dr. James J. Putnam, in a paper read before the American Neurological Association,† treated at length of a series of cases of "paræsthesia mainly of the hands." He based his paper upon the notes of thirty-one cases, and the description he gave resembles those which had now been related. He found that most of his patients were women, and almost all were in middle

life, but he did not remark upon the fact that they were about the period of the menopause. Dr. Putnam suggested that the possible cause of the affection was "alterations of the blood-supply of the smaller branches or terminal filaments of the sensitive nerves supplying the affected districts."

The treatment by this writer consisted in the use of galvanism, phosphorus, strychnine, bromide of potassium, and several other drugs. He did not think that he had had sufficient opportunity to test the value of the different remedies, but seemed to have found phosphorus of more value than any other one means used.*

Dr. J. A. Ormerod had described twelve cases† which very closely corresponded to those which had come under Dr. Sinkler's observation. All of his patients were women, and the attacks of numbness began to come on about the cessation of the menses. Three of the patients were rheumatic, and in some the trouble proceeded from the nature of their work. Bromide of potassium afforded marked relief in many of the cases. Dr. Ormerod compared this affection to the deadness of the fingers which some persons experienced after exposure to cold, and therefore ascribed it to vascular spasm.

It had seemed to him (Dr. Sinkler) that in these cases there was probably a condition of hyperæmia either of the nerve-trunk or of a portion of the cord. In some cases he thought the hyperæmia was confined to the nerve-trunks or to some of the terminal filaments of the sensory nerves, but in others it seemed not unlikely that the cervical enlargement of the cord became hyperæmic or congested, from the fact that the numbness was often bilateral. The circumstance that the affection came on at night seemed to strengthen the view of the pathological condition being one of hyperæmia, for the supine posture favored an increase of blood in the cord and the nerves of the extremities. He had seen patients in whom the numbness would come on if they lay down and fell asleep even for a short time in the day. Women at the change of life were more prone to hyperæmias and congestions than at other periods of life, and they were the most frequent subjects of this form of numbness.

In several of his cases ergot gave marked relief, and Dr. Ormerod had found bromide of potassium the most successful therapeutic means he had used. Both these remedies were believed to diminish the blood supply in the nervous centers. It was true that Dr. Putnam had found phosphorus the most useful drug in his cases, but in one of those which he reported the remedy had failed, and in another relief was given with bromide of potassium. From his experience in these cases Dr. Sinkler would say that the prognosis in middle aged women was not good as regarded permanent relief. The numbness could generally be benefited greatly or stopped for the time, but it was liable to return. When the trouble had been induced by overwork of the part, one could almost surely promise permanent cure if the cause could be removed.

With regard to treatment, as already indicated, ergot had proved the most useful medicinal means he had employed. Massage and spinal galvanism were always useful adjuncts, and so were all means which improved the general health. Bromide of potassium had helped some of his patients, and one was much benefited by sinapisms over the spine. It was found advantageous in most cases to give strychnine for a time after the disappearance of the numbness.

* In a note recently received by Dr. Sinkler from Dr. Putnam, the latter says that he has lately found lead in the urine of one of the patients referred to in his paper, and thinks that it should be looked for in all cases of numbness.

† "St. Bartholomew's Hospital Reports," 1883.

* "Med. and Surg. Reporter," Dec. 2, 1876.

† "Archives of Medicine," vol. iv, No. 2, Oct., 1880.

A Study of the Nutritive Value of Branny Foods.—The following paper, prepared by Dr. N. A. RANDOLPH and Dr. A. E. ROUSSEL, was read:

From an economic standpoint the question of the nutritive value of bran is one of great importance, for the removal of this portion of the wheat implies a loss of from 17 to 20 per cent. in the weight of the grain. In spite of this loss, which necessarily renders white bread more expensive than that made from whole wheat-flour, even the poorest inhabitants of most civilized countries where bread is not the staple food insist upon eating the bread made from the finest flour. A tendency so wide-spread as this would apparently indicate the unconscious summation of the experiences of many generations, and go far toward proving the propriety of such a selection.

The use of flour representing the entire wheat-grain has, however, been long and ably advocated, the reasons given for the retention of bran being that its removal entails the loss of—

I. "Nutritive salts" (*Nährsalze* of Liebig).

II. Carbohydrates.

III. Proteids, notably gluten.

The facts also that branny foods, in common with many others, will spur an atonic bowel to activity, give due bulk to its contents, and induce the passage of stools of the normal or feculent consistence, are noteworthy, but their further consideration is beyond the limits of the present paper. The other reasons for the retention of bran in wheat-flour will be discussed *seriatim*.

I. The fact that fine flour contains a much smaller percentage of salts than either bran or the whole wheat does—a fact shown by the relatively small amount of ash which it yields—forms the basis of the theory of Liebig,* that in the removal of bran nutritive salts of value are lost. The investigations of Meyer† and Forster‡ are often cited as showing that, after the removal of bran, these salts are still present in quantity sufficient for the needs of the economy.

Our experiments upon young pigs, described farther on, show that, although survival is quite possible upon an exclusive diet of bread from white flour, growth is much more active upon a diet of bread containing a greater amount of inorganic matter. It is possible that Liebig's estimate of the needful amount of inorganic matters was too high, but it is equally noteworthy that there is a tendency on the part of late writers to give insufficient prominence to the importance of these elements of food. It may not be out of place here to mention a striking illustration of the absolute necessity for inorganic salts in the fluids of the economy, as recorded by Dr. S. Ringer.* This observer found that while minnows were kept in ordinary tap-water they would live for weeks unfed. When, however, they were placed in distilled water they died on an average in four hours and a half. Further, that in a rude imitation of spring water, made by the addition to distilled water of potassium and calcium chlorides, and of sodium bicarbonate, the fish lived on an average about two weeks. Study of the factors in the experiments showed that death was due to a diminution of salts in the economy of the fish. That such diminution, even when very slight, could result fatally, was shown by an analysis of the distilled water after the death of the fish, traces only of inorganic matter being found.

II. The loss of carbohydrates involved in the removal of bran appears at first sight not inconsiderable, as it amounts to

about 20 per cent. of the carbohydrates present in the entire grain. The members of this group represented in bran are starch and cellulose. The former is present in extremely small amount, while the latter, as has been proved by the experiments of Donders,* Mulder,† and Poggiale,‡ is digestible in any noteworthy degree* by the herbivora only. The observer last named subjected a given weight of dry bran to the successive actual digestions of two dogs and one hen, and thereafter was able to recover over 65 per cent. of its non-nitrogenous constituents. The loss in cellulose was probably much less than that here indicated, for we have found that during the maceration of bran in the digestive tract certain portions become detached from the main flake, and are with the greatest difficulty recovered.

III. Wheat bran contains a considerable but varying proportion of nitrogenous compounds, averaging, however, about 14 per cent.‡ This fact has permitted the continued existence of two widely credited assumptions: (a) That this nitrogen exists in albuminoid combination, or, in other words, is in a nutritious form; and (b) that the proteid matter of wheat is contained almost exclusively in specific cortical cells of the grain—the so called "gluten-cells."

(a) Nearly all the existing estimates of the proportion of proteids in food stuffs are based upon the hypothesis that all of the contained nitrogen is present in some albuminoid combination. The percentage of nitrogen in a given food is therefore ascertained, multiplied usually by either 6.5 (Payen) or 6.33 (Ritthausen), and the result recorded as the percentage of proteid matter. It has lately been conclusively proved that nitrogen in non-albuminoid combination—i. e., in compounds not capable of affording nourishment to any higher organisms—is present in many food-stuffs, and especially in those of vegetable origin. As a case in point may be mentioned the analyses of Wigner,^Δ in which it is shown that, of the total nitrogenous matter of the entire wheat-grain, 87.9 per cent. is coagulable—i. e., distinctively proteid. Of the bran, only 42.4 per cent. of its nitrogenous compounds are coagulable, whereas, in the flour, 89.7 per cent. of these bodies come under the head of true proteids. Yet more marked instances of the inaccuracies attending the ordinary methods of estimating proteids have become evident in the course of researches by Schulze and Barbieri,[◊] who find that, of the entire nitrogen of the potato, but 56.2 per cent. enters into the composition of albuminoid matter, while in the fodder-beet only 20 per cent. of its contained nitrogen is thus combined, the remaining 80 per cent. aiding in the formation of amides, nitrates, and ammonia. It is evident from these facts that estimates of the nutritive value of branny and other foods, based upon the percentage of nitrogen present, must be received with caution.

(b) The term "gluten-cell" is, through a wide-spread misapprehension, applied to the cells constituting the fourth layer (Parkes) of the wheat-grain. These cellular elements exist

* "Nederl. Lancet," vol. vi, pp. 227, 244.

† "Physiologische Chemie," p. 1024.

‡ "Comptes rendus," vol. xxxvii, p. 173.

* See, also, Weiske ("Centralblatt," No. 26, 1870), who finds that a small percentage of cellulose, especially when cooked, is dissolved in the human digestive tract.

Δ Dempwolf, "Ann. d. Chem. u. Pharm.," vol. xli, p. 343. His figures, of interest here, are as follows: The amount of nitrogenous matter in the whole wheat was 14.35 per cent. The amount varied in the different grades of white flour from 11.01 to 15.56 per cent. The nitrogenous matter of the two grades of bran made from this wheat was, respectively, 13.93 and 14.06 per cent.

◊ "Der Österr.-Ungar." Müller, 1879, p. 52.

◊ Quoted by Voit, Hermann's "Hdb. d. Physiol.," vol. vi, p. 462.

* "Chemische Briefe," 1851.

† "Zeitschrift f. Biologie," vol. vii, p. 33.

‡ *Ibid.*, vol. ix, pp. 293-380.

* "Journal of Physiology," vol. iv, No. vi, February, 1884, in the appended Proc. of the Physiol. Soc., session December 13, 1883.

usually in a single stratum, as irregularly cuboidal bodies in each of which, surrounded by a dense and laminated cellulose wall, are seen the semi-opaque granular contents. Upon the addition of reagents, especially in the form of caustic alkaline solutions, there is almost constantly noticeable a differentiation of the contents strongly suggesting the presence of a nucleus. Under these conditions, also, a coalescence of many of the individual granules forming the contents occurs, with the formation of several highly refractive spheroidal bodies, an appearance which has led Payen (as quoted by Dr. Richardson) to use the name *oléifères* as a synonym for the cellular constituents of the fourth coat. The hypothesis that the cells of this layer are the chief gluten-bearers of the wheat-grain is usually attributed to Donders.* The return of bran to flour was at about the same period also advocated by Millon and Mége Mouriès.†

From this time on, with but few dissenting voices, the "gluten-cell" has been generally spoken of as the index of the nutritive nitrogenous matter‡ of the wheat-grain, while the central portion included within this layer, and constituting fully 80 per cent. of the grain, has been popularly regarded as being made up almost exclusively of cellulose and starch, and attempts have even been made to estimate the nutritive value of certain cereal food-stuffs by a microscopical determination of the proportion of "gluten-cells" present.‡

The manifest impropriety of such methods has of late been strongly emphasized by Professor Richardson, of this city, and Professor Leeds, of Hoboken. The credit of the first disproof of the exclusive limitation of gluten to the cells of the fourth layer is probably due to Schenk,|| who treated sections of wheat-grain with Millon's reagent, a pink coloration of the endosperm resulting. This coloration was most vivid at the periphery, indicating a gradual condensation of the proteid constituents of the grain as the cortex was approached. The same writer found "no coloration of the 'gluten-cells' as a result of this reagent," an observation which we can not confirm; for, apart from the readily demonstrable slight coloration of the contents of "gluten-cells" after the application of Millon's reagent, it is more than difficult to conceive a cell, however specialized, which shall exhibit no proteid matter as a portion of its contents. Schenk also noted, in artificial gastric diges-

tions of sections of wheat, that the starch granules which (to a greater extent) fill the cells of the central portion of the grain became detached, and from this fact deduced the just proposition that the starch granules lay imbedded in some albuminoid substance. In a study of the distribution of gluten within the wheat-grain,* the senior writer has described several methods for the ocular demonstration of gluten, in very considerable amount, in that portion of the grain included within the fourth layer, and entirely independent of the "gluten-cells." The methods were as follows:

If whole wheat-grains be macerated in water, to which a few drops of ether have been added to prevent germination, they will in a few days become thoroughly softened, and the contents of each grain may then be squeezed out as a white, tenacious mass. Examination of the remaining bran shows the "gluten-cells" undisturbed, closely adhering to the cortical protective layers. By now carefully washing the white extruded mass, the major part of the starch may be removed; and, upon the addition of a drop of iodine solution, microscopic examination shows numerous networks of fine yellow fibrils, still holding entangled in their meshes many starch granules, colored blue by the iodine. In carefully washed specimens, the sponge-like networks are seen to retain the outline of the central starch-filled cells, and evidently constitute the protoplasmic matrix in which the starch granules lay. Upon gently teasing such a specimen under a moderate amplification, the fibrils will be seen to become longer and thinner in a manner possible only to viscid and tenacious substances—a class represented in wheat by gluten alone.

An eminently satisfactory proof of the proteid nature of these central networks may be obtained by heating the specimen in the solution of acid nitrate of mercury (Millon's reagent), when the fibrils will assume the bright pink tint characteristic of albuminoids under this treatment. The results of the application of the xanthoproteic and biuret reactions are equally conclusive, but more care is required in the use of these proteid tests, and the resultant differentiation is not so clear. Reticula similar to those above described, but much broken, and, consequently, far smaller, may be seen, upon close examination, scattered throughout fine white flour without the use of any reagent.

In even the thinnest sections of the wheat-grain the gluten of the central portion is always masked by large numbers of starch granules. These may to a large extent be removed by immersing the section for a short time in liquor potassæ, with subsequent careful washing. The alkali effects the hydration and partial solution of the starch; but, if its application be too long continued, the gluten will also be dissolved. This treatment is well adapted to show the rather dense gluten networks usually found adherent to bran immediately below the fourth layer.

The most satisfactory method of studying the distribution of gluten in sections of wheat is that of artificial salivary digestion. If the section be gently boiled for a moment to hydrate the starch, then transferred when cool to filtered saliva, and maintained for from half an hour to an hour, at a temperature of about 98° F., all the starch will be dissolved, while the insoluble proteid and other constituents will remain *in situ* and entirely unaltered. The same result may be obtained from a somewhat more prolonged digestion of the unboiled section. A section of wheat-grain thus treated will exhibit throughout its entire central portion close-meshed gluten networks, which become slightly denser toward the cortex of the grain. The proteid character

* "Nederl. Lancet," iv, 739; vi, 227, 244; Third series, vol. i, 377.

† "Comptes rendus," vol. xlv, p. 47.

‡ By general consent, the albuminoids of the wheat-grain are grouped together as gluten, which is, however, further separable into gluten-fibrin, gluten-casein, gliadin, and mucedin, proteid bodies practically equal in nutritive value, but differing in certain physical properties, notably that of solubility. It must therefore be borne in mind that, in all methods of separating gluten from the other constituents of the grain, its (relatively small) soluble portion is removed with the starch, and that any estimate of the quantity of gluten based upon such methods will probably be below rather than above the actual amount. Ritthausen ("Die Eiweiss-Körper der Getreidearten," 1872) believes that a certain amount of true albumin should be included with the constituents of gluten just mentioned. An observation of Denis ("Mémoire sur le sang," 1859), confirmed by Hoppe-Seyler ("Med.-chem. Unters.," 1867), and Weyl ("Ber. d. deut. chem. Ges.," xiii, 10, 1880), demonstrates that a portion of the proteids of the cereals exists in the form of a globulin. Thus, the observer last named has shown that in wheat-flour treated with a 15-per-cent. solution of sodium chloride no formation of gluten occurs. We have found that bran, when macerated in 15-per-cent. salt solution, yields a considerable amount of proteid matter precipitable by nitric and picric acids. We incline to believe, however, that this is not a true albumin. (See Vines, "Journal of Physiology," vol. iii, p. 93.)

§ E. Cutter, M. D., "Gaillard's Med. Jour.," Jan., 1882.

|| "Anat.-physiol. Untersuch.," p. 32, Wien, 1872.

* Randolph, "Proc. of the Acad. of Nat. Sci. of Phila.," Dec. 11, 1883, p. 308.

of these reticula is here, as in the first method, susceptible of micro-chemical demonstration. Upon the application of Milon's reagent to such a section, a relatively very faint coloration, indicating the presence of albuminoids, is noticeable in the "gluten-cells," while the gradual condensation of the gluten of the endosperm as the fourth layer is approached is evident even to the unaided eye.

The fact that the gluten networks become denser toward the periphery of the endosperm, together with the presence of non-albuminoid nitrogenous compounds in the perisperm, explains the notable percentage of nitrogen found in bran as ordinarily roughly removed.

The small proportion of albuminoids present in the cells of the fourth layer, as evidenced by their feeble response to the proteid tests, together with the very considerable quantity of gluten which we have shown to exist in the central four fifths of the grain (i. e., the portion lying within the fourth layer), justifies us in the conclusion that by far the major portion of the nutritious nitrogenous matters exists in entire independence of the "gluten-cells."

The difficulties which attend the complete isolation of these cells, however, have as yet rendered impossible any accurate estimation of the proportion of their proteid contents. Admitting for the moment that the "gluten-cells" contain albuminoids in any noteworthy amount,* there are yet present conditions which seriously affect, if they do not entirely nullify, the nutritive efficiency of this portion of the grain.

The first of these conditions is the presence of the rough bran scales which, by increasing peristalsis, so hasten the passage of the entire intestinal contents that complete digestion and absorption are prevented. The second is that, owing to the dense cellulose walls of the "gluten-cells," their contents are practically unaffected by the digestive juices. The fact that the presence of branny scales in the digestive tract prevents the thorough digestion of the intestinal contents and induces the passage of feces containing a considerable excess of undigested nitrogenous matter is fully attested by the observations of Meyer and Rubner.† Edward Smith‡ has also closely studied the economic phase of this subject, and reports most unfavorably upon the use of branny foods, stating that the diminished absorption of nutritive matters entailed by their use more than counterbalances the (apparent) gain in cheapness. Of interest in this connection is the observation of Fr. Hofmann,§ who noted that the amount of feces passed upon a meat diet was remarkably increased by the addition of cellulose to the food taken.

The feeble response of the "gluten-cell" to reagents and digestive juices has been noted by several observers. Thus, Donders|| states that these bodies are digested by the herbivora, but not by dogs or man. Similar results are recorded by Poggiel,^ and for domestic fowls by Meissner and Flügel.¶ J. Leh-

* Apart from the statement of Schenk, above cited, the entire absence of gluten in the cells of the fourth layer has been latterly affirmed by Mége Mouriés, who is quoted by Payen ("Substances alimentaires") to the effect that these cells are "filled with nitrogenous substances of which gluten is not at all one." He finds the cells in question to contain, in addition to the salts of magnesium, lime, and potash, a peculiar diastatic ferment, cerealine, whose function is the transformation of the starch of the grain into dextrin and glucose for the nourishment of the germinating seed.

† "Zeitschrift f. Biologie," vol. vii; *ibid.*, xix, 1883, p. 46.

‡ "Foods," 1875, p. 175.

§ Voit, "Sitzsber. d. bayr. Acad.," Dec., 1869.

|| "Physiologie" (German ed.), p. 273.

^ "Comptes rendus," 1853.

¶ "Zeitschrift f. rat. Med.," vol. xxxi, p. 185, and vol. xxxvi, p. 184.

mann* records the feeding of pigs for thirty-two days on bran which contained scarcely any flour, with a nearly negative change in weight, although the bran contained 15.5 per cent. of nitrogenous matters.

The ability of herbivora to digest "gluten-cells" and similar bodies is probably due to the relatively powerful amylolytic ferments of their digestive fluids, for it has been demonstrated that pepsin is unable to traverse cellulose.† It has also been shown by one of us‡ that the cells of the fourth layer are to all appearance entirely unaffected by prolonged artificial digestions—salivary, gastric, and pancreatic—and further that their contents were but little changed, and their walls in no wise disintegrated by immersion for some days in strong acids and alkalis.

Lately, however, in the course of an admirable paper upon the nutritive relations of gluten, Rubner§ has stated that, although branny foods increase the amount of nitrogen in the feces, fully three fourths of the nitrogenous matter of bran is digested. In the bran used there was present 4 per cent. of nitrogen, "equaling 25 per cent. albuminoids," while in the bran obtained from the feces of the persons under observation only 0.9 per cent. of nitrogen was obtainable. We hesitate in criticising the results of so able an observer, but it seems to us that there were two sources of error in this portion of his investigation. In the digestion of bran, the free, adherent gluten, which properly belongs to the more central layers, is of course readily dissolved with a consequent reduction in the nitrogen of the bran. Apart from this, however, a loss in nitrogen is to be expected from the diffusion of nitrogenous crystalloids; further, the "gluten-cells" become so separated from the true bran during their maceration in the intestinal contents that it is nearly, if not quite, impossible to recover them.

In order to satisfy ourselves regarding the digestibility of the cells of the fourth coat, we have subjected bran with its adherent "gluten-cells" to actual digestion by twelve well-nourished adults—six males and six females. These twelve persons were selected from a larger number by excluding all whose feces exhibited under microscopic examination any inefficiency in the amylolytic and proteolytic digestive ferments as evidenced by the presence of starch or muscle fiber in more than a minimal amount. Sources of error arising from individual peculiarities having been eliminated by the number of persons under observation, and the best conditions for digestion having been obtained, these persons then received daily for three days, in addition to their regular food, one ounce of thoroughly boiled bran. Their feces for the last two days of the treatment were submitted to close microscopical examination, with results so nearly uniform as not to require tabulation. In every case the number of "gluten-cells" present was more than sufficient to render a diagnosis of the food taken a matter of great ease. In two thirds of the cases no evidences of disintegration of any of the cells could be found upon repeated examination of many fields from each specimen. In four cases a small proportion (less than 10 per cent.) of the numerous cells examined showed evidences of having been affected by the digestive process, the cell contents having become lighter in color and less opaque. If, however, any true digestion of the cells had occurred, it is evident that many of these elements in different stages of disintegration would have been seen.

As a rule, we found that the several layers of the bran presented an appearance, not of having been digested, but simply of having been subjected to prolonged maceration. Thus, the

* "Amtsbl. d. Handl. u. Wer. d. Königr. Sachsen," 1868, No. 2.

† Hammersten, "Jahresber. d. Thierchemie," vol. iii, p. 207.

‡ Randolph, "Proc. of the Acad. of Nat. Science," 1883, p. 311.

§ "Zeitschrift f. Biologie," vol. xix, 1883, p. 46.

three coats of the true bran, while entirely unchanged, were frequently found separated from each other. We had expected to find the fourth layer closely adherent to the third, as is the case in dry bran, but in the majority of specimens these two coats became separated, and occasionally large sheets of "gluten-cells," to all appearances perfectly normal, were seen. As a rule, however, that portion of the fecal mass representing the meal at which bran was taken* was found to contain these thick-walled cells in nearly every field.

A study of the nutritive relations of a given food may be approached from three sides: First, from that of the exact chemical composition of the food, a knowledge absolutely essential to any scientific scheme of diet; second, from that of the various excretions of the individual or animal upon the diet in question; and, third, from the more clinical standpoint of study of the effects exerted by a given diet upon the growth and nutritive processes of the organism under observation. After an examination of branny food in the light of the first two methods, we attempted its study by the third. To this end six young pigs of the same litter, and all in fair health, were weighed and placed under the same conditions in pairs, in three separate bins. Those in the first bin daily received bread especially made from whole wheat-flour, in amount corresponding to one fourth of a pound of dry bread each. To those in the second bin was given a corresponding amount of bread made from wheat whose three external coats only had been removed. The pigs in the third bin received the best white bread in amount corresponding to the standard above mentioned. A sufficient (fixed) quantity of water was given twice daily. The following table shows the weight of each pair at the beginning of the observation, and at the end of, respectively, ten and thirty-two days thereafter:

Bin.	Age.	Food.	Joint weight Mar. 6.	Joint weight Mar. 16.	Joint gain 10 days.	Joint weight Apr. 7.	Joint gain 32 days.
	weeks.		lbs.	lbs.	lbs.	lbs.	lbs.
I.	6	Bread from whole wheat	24.5	29.0	4.5	33.25	8.75
II.	6	Brown bread from deoricated wheat	24.75	28.25	3.5	34.50	9.75
III.	6	White bread	25.25	27.25	2.0	33.0	7.75

Comparison of these weights exhibits curious and apparently contradictory results, viz., that during the first ten days the gain was greatest in the pigs fed upon whole wheat bread, whereas, at the end of thirty-two days of such feeding, the gain was most pronounced in the pigs fed upon bread made from wheat whose three outer coats had been removed. The cause of this variation in results is not far to seek. At the commencement of the experiments the animals were small, and the food given was in each case more than sufficient to replace the waste in both the tissues and circulatory fluids. Even the pair fed upon bread containing the innutritious and waste-inducing bran digested and absorbed sufficient proteid matter to supply the needs of the tissues, and normal growth was also favored by the presence of bulky intestinal contents of a mechanically stimulating nature, and also by the nutritive salts which were present in this bread in larger amounts than in the others. On the other hand, at the end of the thirty-two days the animals had notably increased in size; the food given was then barely sufficient for the needs of the economy, and any conditions im-

peding its complete digestion and absorption produced a notable effect upon the rate of growth of these young animals.

It must be borne in mind that these experiments relate only to the value of the different breads when taken alone to the exclusion of other foods. The experiments of Rubner, before cited, leave no doubt that a white bread contains more assimilable nutriment than one made from the whole wheat does, but this does not render it a desirable food-stuff for exclusive use. On the contrary, a weaned but still quite young omnivorous mammal thrives better upon an exclusive diet of bran bread than on white, and, presumably, because the earthy and alkaline salts are present in greater abundance in the former, and also because the indigestible constituents tend to give to the intestinal contents that bulk and consistence which are essential to the hygiene of the digestive tract. But, as has been shown by Edward Smith and others, the branny scales are needlessly irritating, and unduly hasten the passage of food* but partially digested. The end which popular hygiene attempts to effect by the retention of bran in breadstuffs can be better attained by other means. Thus, the nutritive salts of food so frequently lost in ordinary methods of preparation are readily restored by the concentration of the liquor in which meats and vegetables are cooked into a soup stock, as is practiced in almost every French kitchen. Again, the various fresh green vegetables used as salads yield in abundance these inorganic food-stuffs the presence of which we have seen is indispensable to normal tissue activity. A further advantage of these and other succulent vegetables lies in the fact that their cellulose, while efficient in giving proper bulk and consistence to the stools, is, as compared with bran scales, soft and uniritating to the digestive tract.

From the facts, old and new, which have been presented, the following deductions appear to us justifiable:

I. The carbohydrates of bran are digested by man to but a slight degree.

II. The nutritive salts of the wheat grain are contained chiefly in the bran, and, therefore, when bread is eaten to the exclusion of other foods, the kinds of bread which contain these elements are the more valuable. When, however, as is usually the case, bread is used as an adjunct to other foods which contain the inorganic nutritive elements, a white bread offers, weight for weight, more available food than does one containing bran.

III. That by far the major portion of the gluten of wheat exists in the central four fifths of the grain, entirely independent of the cells of the fourth bran layer (the so-called "gluten-cells"). Further, that the cells last named, even when thoroughly cooked, are little if at all affected by passage through the digestive tract of the healthy adult.

IV. That in an ordinary mixed diet the retention of bran in flour is a false economy, as its presence so quickens peristaltic action as to prevent the complete digestion and absorption, not only of the proteids present in the branny food, but also of other food-stuffs ingested at the same time.

V. That, inasmuch as in the bran of wheat as ordinarily roughly removed there is adherent a noteworthy amount of the true gluten of the endosperm, any process which in the production of wheaten flour should remove simply the three cortical protective layers of the grain would yield a flour at once cheaper and more nutritious than that ordinarily used.

* We did not find it needful to give with the bran any coloring matter to differentiate in the feces the meal at which it was taken, as the scales of bran were always a sufficient index. When requisite, such differentiation may readily be obtained by the method of Cramer ("Zeitschr. f. physiol. Chem.," vol. vi, p. 354), or that of Rubner (*loc. cit.*).

* An observation worthy of mention in this connection is that of Rubner, who finds that, while the presence of much woody fiber and harder cellulose in the intestinal contents induces the passage of stools containing an excess of undigested proteid foods, the absorption of fats under the same conditions is not materially affected.

Lectures and Addresses.

THE CARTWRIGHT LECTURES

ON

METHODS OF STUDYING THE BRAIN.

DELIVERED BEFORE THE ALUMNI ASSOCIATION OF THE COLLEGE OF PHYSICIANS AND SURGEONS, NEW YORK, FEBRUARY 2, 4, AND 6, 1884.

By BURT G. WILDER, M. D.,

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LECTURE III, PART II.

(Continued from Vol. XXXIX, page 656.)

F. Anatomical figures should be placed so as to be most readily understood and instructively compared. In comparing pictures of two or more houses, ships, or stoves, the architect, the ship-builder, or dealer places them in such positions with regard to one another and his own eyes as may minimize the effort at mental transposition. If asked the principle on which he acts, he will probably say that no principle is needed; that he simply follows nature, experience, and common sense.

With few exceptions, it seems to be reserved for those whose business is the contemplation of natural objects, who are credited with more than the average degree of intelligence, and who have at command the recorded experience of centuries, to disregard a matter whose importance is equaled only by its simplicity.

Even where, as in the "Poissons fossiles" of the elder Agassiz (B), and in Huguenin's "Centres nerveux" the representations of laterad or mesad surfaces are uniformly placed (in the one case with the head toward the left and in the other toward the right), the desirability of maintaining such uniformity is not distinctly expressed. In most works on comparative anatomy there is an utter absence of system, and for the most part this applies to Quain and Gray, although the former sets a good example in respect to all the figures including the terma ("lamina cinerea"), 258, 279, 292, 303, 319. Seldom indeed are symmetrical figures placed otherwise than with the meson coinciding with that of the observer, but even this is less likely to confuse than the apposition of transections of a subcylindrical mass like the myelon, with the dorsum above in the one and below in the other, as in a recent number of this journal.

The prevalent carelessness in this regard may be attributed to three sources: *a*, The still too common idea that illustrations are of secondary importance; *b*, the fact that most figures have been copied, and thus placed without regularity as in the original; *c*, some time and trouble are required to reverse them.

The desirability of observing some uniformity in the position of anatomical figures was first impressed upon me twelve years ago in the effort to determine the fissural homologies among the carnivora, and in 1873 I adopted and suggested the plan of placing all the cephalad ends toward the left (17; 11, 217, Pl. 1-5; 18, Figs. 1-8).

Since most of the fissures usually appear to the best advantage from the side, the unnaturalness and inconvenience of the application of this rule to symmetrical figures were less apparent at that time, but were freely admitted in later publications (14, 544, 545; W. & G., 31).

Definitions.—Before stating the general rules as to the position of figures which are followed in the Anatomical Laboratory of Cornell University, it may be well to define a few new or little-used terms, which are employed for the sake of brevity and accuracy. The words are arranged rather in logical order than alphabetically.

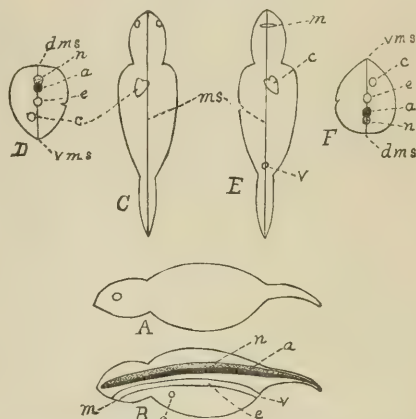


FIG. 57.—SIX DIAGRAMS REPRESENTING CARDINAL ASPECTS AND SECTIONS OF A LIMBLESS VERTEBRATE. The boundaries of the head, trunk, and tail are indicated by constrictions. The limbs are omitted as involving needless complication. The eyes (not named) serve to indicate the cephalad end and the dorsad aspect. The heart, *c*, lies mostly sinistrad of the meson, as in mammals, and is seen to be in the sinistral-cephalo-ventrad eighth, whether of the body as a whole, or of the trunk alone. In the transections C, F, the right side is distinguished by a notch.

ABBREVIATIONS: *a*, axon, the body-axis; *c*, cardia, the heart; *dms*, dorsomeson, the dorsal margin of the meson or mesal plane; *e*, enteron, the alimentary canal; *n*, mouth; *ms*, meson, plana mesalis; *n*, neuron, axis neuralis, the cerebro-spinal axis or myelencephalon; *v*, vent or anus; *vms*, ventrimeson, the ventral margin of the meson.

A, sinistral aspect, or left side.

B, mesad aspect of the right half, after medisection (mesal hemisection).

C, dorsum, or dorsad aspect. The eyes are shown but not named. The straight line is the meson, and the heart is represented as if the body were transparent.

D, caudad aspect after dorso-ventral transection at the heart.

E, venter, or ventrad aspect. The meson and heart are as in C, but the latter, of course, is reversed in position on the page. Instead of the eyes, the mouth and vent appear.

F, caudad aspect after dorso-ventral transection at the heart. As compared with D, in respect to position on the page, there is not only dextro-sinistral but dorso-ventral inversion.

A and B are antimesal figures. C, D, E, and F are symmesal.

In the accompanying diagrams an entire animal is shown rather than the brain, because the outlines are simpler and more familiar, and the several regions are more readily recognized. No particular species is intended.

Axon.—The mesal, longitudinal, skeletal axis, represented in *Branchiostoma* and embryos by a membrano-gelatinous notochord, and in most adult vertebrates by the cartilaginous or osseous vertebral centra and basis crani.

Enteron.—The alimentary canal, lying ventrad of the axon.

Neuron.—The mesal nervous axis, myelencephalon, or axis cerebro-spinalis, lying dorsad of the axon.

Meson.—The ideal plane of separation or junction of the right and left halves of the vertebrate body; the mesium, plana mesalis, middle or median plane.

Dorsimeson.—The dorsal margin of the meson; the dorsal median line.

Ventrimeson.—The ventral margin of the meson; the ventral median line.

Picture-plane.—The plane or surface on which an object is, or is supposed to be, projected or represented; the perspective-plane.

Symmesal.—Having the meson parallel with the picture-plane, or forming therewith less than a midangle (45°) (Fig. 58, A, B; Fig. 59).

Antimesal.—Having the meson perpendicular to the picture-plane, or forming therewith an angle of more than a midangle (45°) (Fig. 58, C, D; Figs. 60, 61).

Direct position.—When the meson of the object is either parallel with or perpendicular to the picture-plane (Fig. 58, A, C).

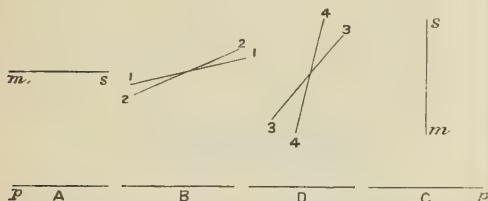


FIG. 58.—DIAGRAMS ILLUSTRATING THE RELATIONS OF THE MESON TO THE PICTURE-PLANE.—The edge of the picture-plane, or plane of projection or perspective, is represented by the four divisions of the line $p-p$; the edge of the meson of the object by the lines $m-s$, 1-1, 2-2, 3-3, 4-4.

A, direct symmesal figure, in which the meson is parallel with the picture-plane.

B, oblique symmesal figure, in which the meson forms with the picture-plane an angle of less than 45° .

C, direct antimesal figure, in which the meson is perpendicular to the picture-plane.

D, oblique antimesal figure, in which the meson forms with the picture-plane an angle of more than 45° .

A and B are symmesal, C and D antimesal; A and C are direct, B and D are oblique.

Oblique position.—When the meson of the object is neither parallel with nor perpendicular to the picture-plane (Fig. 58, B, D).

Antitropic.*—Symmetrically related in position; similar, but pointing in opposite directions, so as to form a pair (Fig. 59, A, B).

Syntropic.—Similar and pointing in the same direction, so as to form a series (Fig. 59, B, C; Fig. 62, B, C, D).

Platetrope.—A part symmetrically related to another on the opposite side of the meson; lateral homologue; fellow of the opposite side. Examples: The right and left eyes, hands, etc.

Hemisection.—Division of the body at the meson or in a plane parallel therewith.

Longisection.—Division of the body in a plane parallel

with the axon, and thus longitudinal, but from side to side, thus at right angles to the meson and to hemisection-planes. (Suggested by Professor Gage.)

Transsection.—Division of the body in a dorso-ventral, dextro-sinistral plane, perpendicular to the meson; transverse section. The word is also applied to a subdivision of the body resulting from transsection, at two levels, or to either of the aspects so exposed.

Averted.—Having the head turned toward the top of the page (Fig. 60, A).

Adverted.—Having the head turned toward the bottom of the page (Fig. 61, A).

Cephalad.—Toward the head; used adverbially of direction, and adjectively as well as adverbially of relative position.*

Caudad, dextrad, sinistrad, dorsad, ventrad, mesad, and laterad.—Adverbs and adjectives signifying, respectively, toward the tail, the right, the left, the back, the belly, the meson, and either side.

General rules for the position of figures.—The following rules are based upon a consideration of (a) the natural attitudes of animals and men; (b) the lateral division of the vertebrate body into a right and left half; (c) its serial subdivision into several segments (metameres or somatomes); (d) the current view as to the normal position of the body; (e) the natural and customary movements of the eyes and head; (f) the arguments, from custom and from the nature of things, for placing the head of an object toward the left; (g) the customary attitude of the head in examining and comparing objects; (h) the value of time to the naturalist; (i) the fact that mental operations, such as are required for the comparison of figures not properly coadjusted, occupy time and attention.

It should be understood that these are merely general rules; probably there is no one of them to which exceptions may not exist; but such exceptions should always have a well-defined reason, and not occur through inadvertence.

The rules are equally applicable, abstractly, to the objects themselves, but there are sometimes obstacles to their practical observance which appear to be well-nigh insuperable.†

1. Figures should be coadjusted so as to facilitate comparison with each other and with typical structures in normal positions.

2. The dorsum should be above.

3. Direct positions (Fig. 58, A, C) are to be preferred.

4. Antimesal figures (Fig. 58, C, D) should be so placed that, if direct (C), the meson of the figure is in the same plane as the meson of the observer.

5. With a single symmesal figure, the head should look sinistrad (Fig. 59, C).

6. In a syntropic series, whether horizontal or vertical (Fig. 59, B, C), the head should be toward the left.

* Heretofore the adjective used has been *cephalic*. The reasons for the change will be presented farther on.

† For example, it is desirable to have some alcoholic preparations or entire examples of fishes, etc., in the horizontal position, so as to be readily comparable with their skeletons. The leakage of alcohol may be nearly or quite prevented by the use of vaseline, as recommended by Professor Gage and myself (W. and G., I).

* For this and the two following terms, see my paper on "Intermembral Homologies" (10, 30, 38, 35).

7. Antitropic figures should be arranged in pairs, and upon the same horizontal line (Fig. 59, A, B).

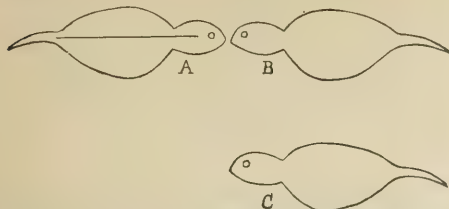


FIG. 59.—TWO WAYS OF PLACING ANTIMESAL FIGURES FOR COMPARISON. A, B, the right and left sides of the same object, or of two different objects, antitropically placed. B, C, the left sides of two objects, syntropically placed, one above the other.

8. When the dorsum and venter are placed side by side, the latter should be at the left if the heads are averted, and at the right if they are adverted. In both cases the object is supposed to be rotated on its axon so as to expose the left side in the interval between the dorsal and ventral exposures.

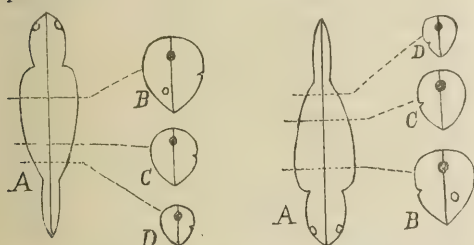


FIG. 60.

FIG. 61.

FIG. 60.—A, dorsum; B, C, D, a series of caudal surfaces, exposed at successive levels. The right and left in these figures coincide in position with those of the observer.

FIG. 61.—A, dorsum, the head toward the observer and the bottom of the page; B, C, D, cephalad surfaces exposed by transections at as many levels. As with the entire figure, the right and left of the transections are reversed as compared to those of the observer.

9. Transections of an antimesal object should form a vertical syntropic series. When the head is averted (Fig. 60),

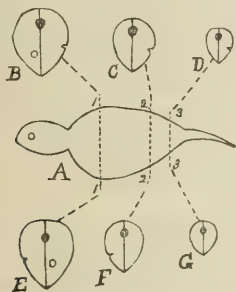


FIG. 62.—LEFT ASPECT OF THE BODY (A), WITH TWO SERIES OF TRANSECTIONS. B, C, D, caudal aspects; E, F, G, cephalad aspects. In the former series the right and left of each figure correspond with those of the observer, who is supposed to be looking from the tail toward the head. In the latter, he looks in the opposite direction, and the right and left are reversed. In B and E the apex of the heart appears on the left of the meson, and in all the transections the right side is notched. This figure also illustrates the way of placing a series of three or more similar figures for comparison. When only two are to be compared, they may be placed antitropically, as in Fig. 63.

caudal surfaces will be shown; cephalad surfaces when the head is adverted (Fig. 61).

10. Transections of a symmesal object, if three or more, should form a horizontal syntropic series (Fig. 62). If caudal surfaces are shown, the right and left of each section will correspond with those of the observer (A, B, C); they will be opposite or reversed if cephalad surfaces are represented (D, E, F).

11. When transection-surfaces are naturally paired, like the opposite ends of a transection-piece (Fig. 63, C, D) or

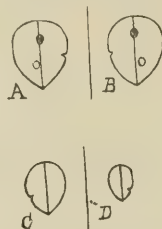


FIG. 63.—TWO INSTRUCTIVE MODES OF PLACING FIGURES OF TRANSECTIONS FOR COMPARISON. In all, the right sides are designated by notches; in A and B the left sides also show the heart.

A, B, the apposed surfaces exposed by a transection at a single level.

The relations of the sections will be more apparent when compared with parts of Fig. 62.

A, B, the apposed surfaces exposed by a transection at a single level, as by the line 1-1 in Fig. 62. A is the caudal aspect of the cephalad portion, and B the cephalad aspect of the caudal portion. As mere surfaces or as microscopic sections they are identical, but, when cavities are exposed, the views in opposite directions are instructively complementary.

C, D, the apposed surfaces exposed by transections at two levels, leaving a mass with a cephalad aspect, C, and a caudal aspect, D. In Fig. 63, F is the cephalad end and D the caudal.

In Fig. 62 the figures form a syntropic series, while in Fig. 63 the apposed or opposed surfaces are in pairs, antitropically placed.

the apposed surfaces formed by a single transection-plane (A, B), they should be placed antitropically like two halves of the same object.

12. When figures in a series are to be compared, like the mesad aspects of hemiencephala (Lecture II, this journal, February 23d, Figs. 40-43), one or more may be reversed from the position they would naturally have so as to conform with the majority, or with the rule of having the cephalad end toward the left.

13. Portions of transections should include a little more than the half, so as to show the location of the meson (Fig. 64).



FIG. 64.—The figures are intended to be identical, excepting for the two degrees of reduction in B and C.

The figure illustrates the way in which a symmesal object which is symmetrical may be represented in part and yet adequately, thus affording room for names or abbreviations.

With special parts should be included, at least in outline, enough of the entire organ or animal to indicate their position therein.

G. The full technical names of parts should be given, if possible. From the purely artistic point of view, any extraneous line upon a picture is a disfigurement. But if it

be once admitted that the primary object of an anatomical drawing is to convey accurate information, then, unless the shaded figure can be duplicated in an outline (as in Tiedemann, B, and Vicq d'Azyr), there should be no sacrifice of the essential to the accessory.

It may be a question whether the names should be upon the parts (as in Gray, Smith, etc.) or at the side of the figure, and connected with the parts by lines (Gegenbaur, D). Upon the whole, the latter method seems preferable, especially if the technical names are used.

H. Abbreviations should represent technical terms, be uniform throughout the work, and be placed at the sides of the figure.

Four methods of designating parts by abbreviations have been employed: 1, By numbers and insignificant and ununiform letters, which may or may not be explained in the text (Owen); 2, by insignificant characters, uniform only in part, and explained at a distance from the figure (Reichert); 3, by uniform and significant, but partly vernacular, abbreviations (Parker, 25); 4, by uniform technical abbreviations (Wilder, 14, and W. and G.). In the last-named work an effort was made, in most cases, to place the abbreviations upon the parts; to do this neatly and clearly is difficult if not impossible, and the authors believe that it is better, usually, to place the abbreviations at the sides of the figure, and to connect them with the parts by dotted lines, although continuous lines are employed by Gegenbaur (D) and Reichert.

The point as to whether abbreviations should be of technical or vernacular terms is involved in the larger question respecting the exclusive employment of technical terms, and will be considered farther on.

The advantages of uniformity in the use of abbreviations are obvious, but it is by no means easy to avoid the chance of ambiguity. Where uniformity is not attempted, care should at least be taken to avoid the use of the same abbreviation for the names of parts which are liable to be taken for one another. For example, in Schwalbe's two representations of the lateral aspect of the mesen and adjacent parts (Figs. 280, 281), not only are opposite sides shown for no good reason, with some differences of detail which are puzzling rather than instructive, not only is the pons designated in one by *p* and in the other by *po*, and the Tractus opticus by *to* in one and *tr.o* in the other, but the letters *tp* stand for the *tenia pontis* in Fig. 280, and in Fig. 281 the *tractus peduncularis transversus* (cimbia). Since these parts are similar in general appearance and direction, and only one appears in each figure, it is doubtful whether any but the most expert anatomist, thoroughly familiar with this somewhat obscure region, could escape at least a temporary misapprehension.

I. Abbreviations should be explained in alphabetical order. The "practical" business man would exclaim, "Of course, how else should they be?" An "unscientific" child would adopt the alphabetical order with letters as he would the order of notation with numbers. But the super-scientific writer, especially if he be a German, scruples not to save a few moments of his own time at the expense of others, by giving the verbal equivalents of ten (Huxley, Fig. 19), fifteen

(Balfour, ii, Fig. 271), twenty (Quain, Fig. 263), twenty-five (Schwalbe, Fig. 279), or even forty (Meynert [Stricker], Fig. 253) abbreviations, either in no recognizable order at all, or as they occur upon the figure. The time wasted by each consulter of the figure (not to mention the effect of just indignation) would nearly equal what it would have cost the author to place the abbreviations in alphabetical sequence.

(To be concluded.)

Original Communications.

RETRO-PHARYNGEAL ABSCESS.*

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THROUGHOUT the body, organs which require a large amount of motion upon each other in the performance of their respective functions are connected by, and the space between them is filled with, loose areolar connective tissue. It is this space that affords the most favorable location for the formation of abscess, the deposit or the collection of the products of broken-down degenerate tissue.

The causes determining the location of abscess in these spaces are:

1. The low degree of vitality of this tissue and the readiness with which it breaks down when attacked by disease.
2. The looseness of this tissue and the ease with which it can be pushed aside or displaced by the accumulations of inflammatory products originating in neighboring parts.

The space behind the pharynx and in front of the vertebral column, which Henke† designates the "retro-visceral spaces of the neck," is filled with a layer of this loose connective tissue to facilitate the movements of the pharynx over the spinal column, necessitated in the act of deglutition, and it is the accumulation of purulent material in this space which we denominate from its location retro-pharyngeal or post-pharyngeal abscess, or, according to König,‡ "retro-visceral abscess of the neck."

Post-pharyngeal or retro-pharyngeal abscesses are divided into two main classes: 1. Those that originate in the soft parts; and, 2. Those that originate in disease of the spinal column; or they may be divided, according to König,* into acute idiopathic and chronic symptomatic.

According to their clinical manifestation or causation, they can be again divided into—

1. Idiopathic.
2. Secondary from burrowing of pus from abscess in the neck.

* Read before the American Laryngological Association, May 12, 1884.

† These visceral spaces of the neck are admirably illustrated by Henke in his "Beiträge zur Anatomie des Menschen mit Beziehung auf Bewegung," 1 Heft, S. 12-14, the drawings for which were made from sections of frozen bodies, the visceral spaces of the neck having been previously injected with glue.

‡ Pitha u. Billroth, "Chirurgie," Bd. iii, 1 Abth., 4 Liefg., S. 8.

* Op. cit., S. 11.

3. Secondary from burrowing of pus from cervical spondylitis.

4. From phlegmonous inflammation following measles, scarlet fever, diphtheria, tonsillitis, etc.

5. Metastatic in septicæmia and following local inflammation or the formation of pus in other parts of the body.

6. Traumatic.*

The views formerly entertained by writers as to the etiology of idiopathic retro-pharyngeal abscess in children have been greatly modified by the more recent and minute study of the glandular structures of this region.

Some writers, as Barmhuger,† Vogel,‡ and Niemeyer,§ believe with Dupuytren|| that abscesses in the posterior portion of the pharynx are nearly always symptomatic of caries of the basilar apophysis of the occipital or of the transverse apophysis or body of the upper cervical vertebrae. And Steiner^ also says that retro-pharyngeal abscess is rarely idiopathic or caused by suppurative of the retro-pharyngeal glands, but is more frequently due to caries of the vertebrae.

Bókai,¶ who has given this subject more careful and elaborate study than any other observer, considered, in his first article, that they mainly arose from a phlegmonous inflammation of the connective tissue, but, since Roustan‡ and Gautier§ pointed out the connection between lymphadenitis and retro-pharyngeal abscess, Bókai's later investigations and observations have shown him that the idiopathic form is due to suppurative of the post-pharyngeal glands.

This view has since been confirmed by Schmitz,‡ Just,**, Albert,†† and most other recent observers.

The relation between idiopathic retro-pharyngeal abscess and retro-pharyngeal lymphadenitis is readily shown by the study of the glandular structure of this region. These glands are the compound follicular and the racemose. The former are quite numerous beneath the mucous membrane throughout the pharynx, while the latter are located mostly in the upper part, forming a thick layer across the back part of the fauces between the two Eustachian tubes (Gray).

In addition to these glands, Heiberg-Hjalmar, of Christiania,‡‡ describes another open system of canals, from which, however, the lymphatic vessels can not be injected.

The lymphatic glands of this region are described by

* This division is mainly that made by Bókai, and formulated by him from his large number of clinical observations.

† "Krank. der chylapoet. Systems," 1855.

‡ "Diseases of Children," Am. ed. from 4th German, 1869, p. 121.

§ "Text-book of Practical Medicine," Am. ed. from 8th German, 1870, p. 458.

|| "Gazette des hôpitaux," Paris, 1851, tome v, p. 374.

^ "Compendium der Kinderkrankheiten," 1872, p. 250.

¶ "Ueber Retropharyngealabscess bei Kindern," "Jahrbuch für Kinderheilkunde," Wien, 1857-'58, Bd. i, S. 183.

‡ "Des abcès rétropharyngiens et de l'adénite suppurée rétropharyngienne chez les enfants." Thèse, Paris, 1869, p. 14.

§ "Des abcès rétropharyngiens idiopathiques ou de l'angine phlegmoneuse." Genève et Bâle, 1869, p. 20.

‡‡ "Jahrbuch für Kinderheilkunde," Leipzig, 1872-'73, Bd. vi, S. 283.

** "Deutsch. med. Wochenschr.," Berlin, 1877, Bd. iii, S. 294.

†† Albert's "Chirurgie," Bd. i, S. 354.

‡‡ "Jahresbericht," 1872, i, S. 45.

Edward Simon* as communicating with vessels which run in a sort of furrow between the forward end of the Eustachian tubes and the rear end of the turbinated bones. Here they form a small network from which two or three trunks of about one millimetre in diameter arise.

These run obliquely backward and outward, one of them terminating in a gland in front of the vertebrae.

These glands are located one on each side of the median line between the constrictor pharyngeus superior and the aponeurosis of the pre-vertebral muscles. Occasionally an additional gland is found.

The vasa afferentia of these glands arise in three or four main trunks from the mucous membrane of the upper and lateral surfaces of the pharynx, and from the upper surface of the soft palate.

The vasa efferentia pass into the glands situated to the outer side of and somewhat below the tonsils, where they meet the large number of the lymphatics of the tongue.† In case only one gland exists, it is generally found to the right side. After the third year of life they generally disappear altogether.

The connection between idiopathic retro-pharyngeal abscess and retro-pharyngeal lymphadenitis is demonstrated very clearly by the complete records so carefully kept by Bókai of all the cases of retro-pharyngeal abscess and retro-pharyngeal lymphadenitis occurring in the Children's Hospital at Pesth during the twenty-six years from 1854 to 1880.

During this period there occurred 204 cases, 179 of which were of the idiopathic form; 7 were secondary to burrowing of pus from abscesses in the neck, 7 secondary to caries of the cervical vertebrae, 9 to scarlet fever, 1 to measles, 1 traumatic.

During this period there occurred 63 cases of retro-pharyngeal lymphadenitis which did not terminate in abscess. The connection between the location of the abscess and the normal location of these glands is also quite significant.

Of these 204 cases, 85 occurred on the right side, 78 occurred on the left side, 37 occurred in the middle, and in 4 the location not stated.

During the same period there were observed 63 cases of retro-pharyngeal lymphadenitis that did not terminate in suppurative. Of these, there were: On the right side, 33; on the left side, 21; in the middle, 4; location not stated, 5.

It is also to be seen from the table that these 267 cases, including the 63 cases of retro-pharyngeal lymphadenitis, occurred in 147,879 patients that were treated during the period from 1854 to 1880, indicating that the affection is by no means of frequent occurrence.

As will also be seen from the tables, the period of the greatest frequency, or almost exclusive occurrence, is during the first two years of life, and after three years of life, when these glands normally disappear, the idiopathic form is seldom seen.

Thus, of the 204 cases, 196 occurred during this period.

Another fact which points to the lymphatic glands as

* Schmidt's "Jahrb.," 107 B., S. 161.

† "Jahrbuch f. Kinderh.," n. F., 1872-'73, vi, S. 283.

the seat of idiopathic retro-pharyngeal abscess is the slow development of the abscess and its circumscribed condition. Phlegmonous inflammation of the connective tissue, and especially of the loose tissue found in the retro-pharyngeal space, runs a rapid course and ends in a few days in suppuration, whereas acute lymphadenitis runs its course slowly, and, as Schmitz* observes, spreads rapidly only after the enveloping membrane of the gland has become perforated.

ÆTIOLOGY.—All constitutional diseases that predispose to inflammation of the lymphatic glands in general play an important part in the production of retro-pharyngeal abscess. Of these, scrofula and hereditary syphilis stand at the head.

Scrofula is by far the most frequent cause of glandular enlargements, although many cases of syphilis in adults, as well as in children, are overlooked, their results being classed under the general and quite satisfying term scrofula.

Bókai† reports two cases in children directly caused by syphilis.

Cases are reported in adults the direct result of acquired syphilis. Thus, Edward Martin‡ reports a case in a man, forty-four years old, the result of syphilis contracted eighteen years before. Tertiary symptoms appeared, with swelling of the lymphatic glands of the neck on the right side, associated with suppuration of the middle ear and mastoid cells. The abscess occurred on the right side of the pharynx. After it was opened, pus could be squeezed out by pressure on the mastoid region. The patient recovered.

The most frequent exciting cause is exposure to sudden changes of temperature and the taking of colds, giving rise to attacks of rhinitis and inflammations about the fauces.

In this connection, the period of the year in which retro-pharyngeal abscess most frequently occurs is quite significant.

From Bókai's tables it is seen that it is most prevalent during the months of November, December, January, February, March, April, and May—months during which colds are also most prevalent.

There can be little doubt of the connection between chronic rhinitis in children and retro-pharyngeal abscess, for it is a well-known fact that enlargement of the lymphatic glands of the neck is almost always found in children suffering from snuffles, and the formation of abscess in lymphatic glands from the absorption of septic material into the lymphatic vessels is a very common occurrence.

Fraenkel* says: "It is not very uncommon for swelling of the glands to outlast the catarrh which caused it, and then it may remain as an independent affection, subject to further changes."

It is now believed that retro-pharyngeal abscess following scarlet fever, measles, erysipelas, and other affections attended with inflammations about the naso-pharyngeal cavity in children, is of the same nature as the idiopathic form, and is the result of disease set up in the glands from lymphatic absorption rather than from the formation of pus in the connective tissue as the direct result of the phlegmon.

In support of this view, Lewandowsky* says: "The presumption that these abscesses have really nothing to do with scarlatina, but are only accidental complications, may be rejected, leaving aside all other reasons, for the reason that the views entertained as to the pathogenesis of these abscesses also give a ready explanation of just why they should occur in scarlatina."

Of two cases of retro-pharyngeal abscess reported by Lewandowsky occurring after scarlet fever, in children aged seven and twelve months, he says: "While both cases in their general character were of a favorable nature, there existed a *violent inflammatory condition of the nose*, upon which I lay special stress as a cause of the retro-pharyngeal abscess. . . . To explain the retro-pharyngeal lymphadenitis by the angina does not appear to me admissible, because in both cases it was exceedingly mild."

Bókai also remarks that the cases reported by him as occurring in scarlet fever did not differ from the idiopathic form.

Surely violent phlegmons of the pharynx must rarely be the cause of retro-pharyngeal abscess, for, among the many cases seen by Bókai, not one was caused by diphtheria.

Suppuration in the tympanic cavity in children is pointed out by Wiel† as a not infrequent cause of retro-pharyngeal abscess. He reports a case in a child, nine months old, that died from secondary œdema of the larynx. On post-mortem, the suppuration in the ear was shown to have been the cause of the abscess.

Wiel quotes Koths (from his article on "Pharyngeal Diseases," in Gerhard's "Handbuch"), who says: "Retro-pharyngeal abscess is also found in inflammations of the middle ear."

Wiel also quotes from Korman: "Idiopathic retro-pharyngeal abscess arises from retro-pharyngeal lymphadenitis. These glandular inflammations are found in cases of inflammation of the mucous membrane of the mouth, pharynx, and ear."

In ten cases of otitis (mostly middle-ear catarrh) Wiel found glandular swellings.

Bókai speaks of the connection between these abscesses and inflammations of the meatus, but does not seem to recognize cause and effect between them.

This relation between the two is an important observation, but is by no means the only ground on which to urge the necessity of prompt and careful attention to all cases of suppuration of the middle ear in children.

The symptomatic indications in this affection are only of value to direct our attention to the seat of the affection, for, as Albert‡ remarks, "the main trouble is that pharyngeal abscess is not thought of, and the patient is treated for angina."

The general symptoms attending this affection—as dysphagia or aphagia, dyspnœa, dysphonia, cough, swelling of the neck externally, etc.—may resemble in many essential particulars those caused by croup, œdema of the larynx,

* *Loc. cit.*

† *Loc. cit.*

‡ "Revue médicale de la Suisse Rom.," i, 1881, p. 622.

* Von Ziemssen's "Cyclopædia," vol. iv, p. 127.

* "Retropharyngealabscess und Scharlach," "Berliner klin. Wochenschr.," No. 8, Feb. 20, 1882, S. 116.

† "Monatsschr. f. Ohrenh.," Berlin, 1881, Bd. xv, S. 43.

‡ *Loc. cit.*

enlarged tonsils, or a foreign body in the larynx, but a thorough examination of the throat, which should always be made in all such affections, will at once reveal the true nature of the difficulty.

The most constant symptom is difficulty in swallowing, although exceptions to this rule occasionally occur.

Pepper* reports the case of a child, thirty-two months old, who had a retro-pharyngeal abscess occurring six weeks after recovery from diphtheria.

In this case the swelling of the pharynx produced great dyspnoea, but no hindrance to swallowing.

It should be noted, however, that in those cases where the abscess is so deep seated that it can not be seen or felt, but produces dysphagia and dyspnoea by compressing the œsophagus and trachea, the voice has a peculiarly shrill tone like a duck's voice, which is of marked diagnostic significance, as Duparcque† has pointed out.

The position of the head is also of special significance. In all these cases there is a peculiar stiffness of the neck resembling rheumatic torticollis, the head being thrown to the unaffected side. This is so characteristic that Albert‡ says he rarely fails of diagnosing retro-pharyngeal abscess on first glancing at the child.

Tenderness over the spine and a kyphotic prominence of some one of the spinous processes are important to note as indicative of caries of the vertebræ.

In the study of retro-pharyngeal abscess we see that the idiopathic form occurs in children, and nearly always when they are under two years of age, and that those cases arising from other causes are rarely seen in children under three years of age, although caries of the vertebræ arising from various causes may occur at any age.

Those originating from the burrowing of pus from neighboring parts, from traumatic injury, from tonsillitis, or metastatically, occur indifferently in adults and young people.

Nélaton* says that suppuration in the region of the perinæum frequently leads to the formation of pus in distant organs, particularly in the neck.

In illustration of this metastatic origin, he reports a case of retro-pharyngeal abscess, the result of or associated with traumatic stricture which led to perineal inflammation and suppuration from extravasation of urine.

A case of retro-pharyngeal abscess following quinsy has come under my own observation.

A student, aged twenty years, was out at a late class supper, ate very heartily, and during the evening took cold. The next day he was sick with diarrhœa, headache, and severe sore throat. He grew rapidly worse, and was treated for ulcerated sore throat. The second day afterward his neck was very much swollen, mostly on the right side. He was hoarse, and spat blood from what proved to be an abscess in the tonsil that had opened spontaneously. When I first saw him, on the fourth day, the surrounding parts were much swollen, as was also the pharynx, which bulged forward on the right side. A digital examination showed this swelling to be a retro-pharyngeal abscess. I at once opened it, and much bloody, purulent matter

was discharged. Soon afterward the tract of the abscess began to extend downward quite rapidly, until it had dissected down behind the cervical portion of the œsophagus and become retro-œsophageal.

The discharge from it was very copious, pus in large quantities being thrown out. At times the discharge was so profuse as to nearly suffocate him. On breathing, it sounded as if the air passed through a quantity of soap-suds. Temperature 103° F., pulse 120. Several physicians saw him with me; but, in spite of all that could be done, he continued to grow worse, the bloody and purulent discharge increased, he became rapidly weaker, and died from exhaustion and increasing suffocation on the third day after I saw him. No post-mortem, I regret to say, was permitted.

The two following cases of retro-pharyngeal abscess have also come under my observation. The first was idiopathic, and of serofulous origin; the second followed scarlet fever; but both could be quite directly traced to nasal disease.

On the evening of February 12, 1884, by the advice of the family physician, I was requested to see a child, nine months old, who was nearly suffocated from what was thought to be diphtheritic croup. I found the child with extreme dyspnoea, evidently caused by obstruction in the throat. The head was thrown to the right side, and there was a marked swelling on the left side of the neck and behind the angle of the jaw. She was unable to cry or to make a laryngeal sound; but there was entire absence of the systemic inflammatory disturbance which attends diphtheritic croup.

Upon examination of the throat, the pharyngeal wall, mainly on the right side, was seen markedly bulging forward. It had the appearance of a tumor, and filled the lower pharynx, nearly cutting off respiration. The neck on the left side, externally, was also greatly swollen from the clavicle to the ear. The swelling in the throat had the appearance of a hard tumor, but to the touch with the finger it was soft and fluctuating, indicating at once its nature.

Being fearful lest, on opening the abscess, some pus should be sucked into the larynx of the child and, in her nearly moribund condition, strangle her, I took the precaution to make a very small incision into the abscess, which allowed its contents to escape very slowly, and, by at once putting her head downward and forward, and holding it there until sufficient pus had escaped to relieve the dyspnoea, all danger was avoided.

Afterward I enlarged the incision to allow free escape of the entire contents of the sac. The child was at once relieved. She took nourishment freely, which she was unable to do at all before.

There has been no tendency to recurrence of the abscess, and the child was improved greatly in its general condition. For a few days afterward, however, she had some embarrassment to respiration, owing to obstruction of the nostrils from snuffles or a subacute catarrhal condition of the passages, from which she had been suffering for several weeks previous to the occurrence of the abscess.

The child from birth had been weak, cachectic, and serofulous, with more or less enlargement of the cervical lymphatic glands. When three months old she had measles, from which she slowly recovered. For two months after she continued to have a succession of bullæ, or fever boils, as they were called, about the neck, arms, and back. They were of about the size of a cent, would fill with pus, and in three or four days break and dry up, new ones forming around the old ones. Sometimes the old ones would refill.

When five months old the child had summer diarrhœa, and convulsions, sometimes three or four a day.

* "Philadelphia Medical Times," Sept. 25, 1875, vol. v, p. 817.

† Schmidt's "Jahrbücher," Bd. v, supplement, p. 191.

‡ *Op. cit.*, p. 356.

* "All. Wien. med. Zeitung," 1862, Bd. vii, S. 43.

Five weeks before I saw her, her cervical lymphatics became swollen, and she began to have a severe cough, like whooping-cough. Three weeks later she began to have some dyspnoea and dysphagia, which gradually increased until I saw her.

(To be concluded.)

A WINTER IN COLORADO.

By EDWARD T. ELY, M.D.,

NEW YORK.

IN the climatic treatment of consumption, cold, elevated regions are certainly now in fashion with the medical profession, and bid fair to remain so. The interest taken in them leads me to give a few of my own impressions of a winter in Colorado. Many places are now open to invalids in Colorado and New Mexico, and each offers its own advantages, especially where business and a permanent residence are concerned. Many eastern physicians think that New Mexico is much warmer than Colorado—that it is something between Colorado and Florida—but this is not true of its chief health-stations—Las Vegas and Santa Fé. Their winter climate is cold, differing very little from that of Colorado. Where a moderately high altitude and a cold, dry climate are desired, I believe there is at present no available place in the world that offers more attractions for a winter's sojourn than Colorado Springs, and it is to this town that my observations have been mostly confined. The beneficial effect of Colorado climate on pulmonary disease is incontestably proved by hundreds of cases. Exactly how this effect is produced is not perfectly plain. Great stress is laid by some writers upon altitude and diminished oxygen, and the action of these conditions upon the human system is explained glibly enough. There is, however, much theorizing that does not rest, so far as I am aware, on any sufficient basis of accurately observed clinical facts. Some of it is opposed to the elementary laws of physics, and is sheer nonsense. Even the laity have grown very learned upon these matters, and some of the conversation which one overhears while sitting about the stove of a high-altitude boarding-house is extremely entertaining. If rarefied air can do all that some of these philosophers claim for it, it is not strange that it should stretch the poor asthmatic's bronchioles until they are glad to give up the fight, or that it should "open up" the consumptive's air-cells so thoroughly that the bacilli are glad to move on to more quiet lodgings. I have heard one man say that the altitude had forced him to give up his sponge-baths, and another once explained to me how his cowboy-hat, which felt easy on his head under the shadow of Pike's Peak, would be so unendurably heavy at sea-level that he would not care to take it home with him!

Probably the most important factor here, and everywhere else, relates to the number of days in the year when the patient in question can enjoy sunshine, pure air, and a life out of doors. The number of such days in Colorado is unquestionably large, although considerable misapprehension exists regarding them. It is a common boast here that there is not a day in the year when one can't get out of doors. This may be true, but the getting out often amounts

only to half an hour on the porch, or a walk to the post-office, and such achievements are not of much account where the question concerns an out-door life. It is customary with writers on Colorado to count the forty-odd cloudy days in a year, which is the average shown by the Signal Service reports, as days when an invalid may be housed by bad weather, and to represent that on the remainder—say three hundred and twenty days—an out-door life is both practicable and agreeable. Such a statement is true, I think, only for those who are quite strong, like some patients in the earliest stages of consumption. Many who come here will be compelled to spend a larger number of days in the house, and on many of the remaining days they will find little inducement to going out, and will shirk it. I have known several invalids this winter who would not be called very feeble, but who have been practically housed from sixty to ninety days, and who have by no means led what I should call an out-door life during the rest of the time. Concerning such a matter, testimony that does not rest on a written record is of little value. For instance, I asked a lady at the hotel how many days she had been shut in by bad weather during the past winter. "Not more than six," was her enthusiastic reply, and yet eighty would be nearer the truth, as she readily admitted when I showed her the result of my own written memoranda. Much of the testimony about climate derived from talking with invalids is as untrustworthy as hers was.

In much that has been written about Colorado climate there has been, to say the least, a *suppressio veri*, and it is not surprising that people so rarely find the weather here to be what they had expected. "Perpetual sunshine" is a phrase so often used that invalids come here really expecting to find it. "Day after day," says one writer, "until weeks merge into months, the sun rises in an almost cloudless east and sets in a cloudless west."* Such an unqualified statement is misleading; even the local weather reports, which more than do justice to the sunshine, rarely show a month without cloudy days. So with the dryness of the atmosphere. Invalids are told to leave their umbrellas at home, and to bring ointments to anoint their noses when the dryness shall have made them sore. If they trust the statement that "there is absolutely no rain after the 1st of September," they may sometimes get a wetting; and, if they anticipate much trouble with their noses, they are likely to be happily disappointed. That iron will not rust, that dead animals do not stink, and that there is no dew-fall, are stock statements, and all untrue. Nor is the snow always licked up by the dry air in the mysterious way so often pictured to us. It does disappear very rapidly, as a rule; but a visitor must not be surprised if he occasionally encounters mud and slush, and sees the snow going the way of all eastern snow. That "it is never muddy here for more than a few hours" is not strictly true. I have seen here genuine fogs, very dense, and lasting sometimes all day. But fogs are uncommon and scarcely worth mentioning, were not their existence so often denied. Then, too, there are the winds, which are surely both disagreeable and objectionable. The efforts of the pamphleteers to prove that this is not a windy place are

* "Colorado Springs and Manitou," Edward Roberts.

more amusing than convincing. The tables of "comparative velocity," etc., which will make the sick man believe that there is only just enough wind here to "blow away the impurities," have yet to be compiled. Many a clear, sunshiny day is so spoiled by cold wind as to be lost to the invalid, and the winter days when there is not more wind than is agreeable are decidedly in the minority. It is difficult to believe that a climate like this, *minus* the winds, would not be a better one. Dr. Solly's statement that "the air is particularly calm in winter" seems almost like a joke.* Dr. Fisk's tables give an average of only twelve calm days in the whole year in Denver. His tables also show that the prevalent wind here is from the south, and he lays stress upon "a prevailing balmy and salubrious south wind" as one of the advantages. "The south wind," he says, "is the salubrious one for the eastern slope of the Rocky Mountains in Colorado, and our table shows that to be the balmy wind that blows."† The fact is, I believe, that the south wind here is one of the most chilly and disagreeable of all, and that, if any wind deserves the name of *balmy*, it is that which comes from the west.

The system of recording clear, fair, and cloudy days, which is in vogue here and at other resorts, is not entirely satisfactory. Observations of the area of the sky covered by cloud are made three times daily—at 7 A. M., 2 P. M., and 9 P. M.—and the mean of these is taken. If the result shows the sky clouded less than $\frac{3}{10}$, the day is clear; if from $\frac{3}{10}$ to $\frac{7}{10}$, fair; if $\frac{7}{10}$ or more, cloudy. Now, a day that is clear at 7 A. M. and 9 P. M., and cloudy all the rest of the time, would thus be set down as a fair day; so would a day that was cloudy at 7 A. M. and 9 P. M., and clear during all the interval. Moreover, a day might be partially cloudy just at the time of the observations and otherwise clear, or *vice versa*. Or, the sky might be cloudy $\frac{3}{10}$ or more throughout the day, and yet the clouds be so distributed as to interfere but little with the sunshine. Again, no account is made of the *density* of the clouds. The sky may be cloudy and yet the cloud be so thin that the sun is scarcely obscured at all by it. Such a method of observing may be all that is desired for scientific purposes, and may give a fair estimate of the amount of cloudiness during each twenty-four hours; but I doubt if it accurately expresses the number of hours of sunshine available for the invalid, and this is what invalids and their doctors most desire to know. A person trying to form an idea of how much time he will be able to spend out of doors in a given locality has comparatively little interest in observations upon the condition of the sky during the hours when he is in bed, however important they may be in estimating the character of the climate as a whole. I think it would be useful if visitors would make supplementary observations on such a plan as the following: Consider the period from 9 A. M. to sunset as the invalid's day; if during this period there is constant sunshine, call the day clear; if less than two hours of sunshine, cloudy; otherwise, fair; and make special mention of wind, storms, days when the sun is not seen at all, etc. I think that such a

classification is eminently just to the climate, and that it would perhaps be a more useful guide, for some purposes, than the statistics now provided. For the invalid's uses, a day that has less than two hours of sunshine between breakfast and sundown is certainly not "fair," whatever the Signal Service Bureau may say about it. The method just proposed might alter somewhat the present showing of clear and cloudy days in Colorado.

Many things said above about the weather may seem trifling, and, in one sense, they are, but still it is necessary to consider just such small matters in order to form an accurate estimate of the climatic conditions of this or any other health-resort. The wild ideas which people coming here entertain about the climate, and the number of wholly unsuitable cases sent here by reputable doctors, show what erroneous opinions have spread abroad. Visitors may fairly expect to find a remarkably dry atmosphere, a rainless winter, a large amount of clear weather, a very warm sunshine, and the purest of air, all of which will constitute, not a paradise, but something far better than prevails over the greater part of our country. They must not expect to realize all that is described by enthusiasts and by those having a pecuniary interest in "booming" the State. They will find that the amount of time which they can spend out of doors will depend somewhat upon their ability to take active exercise and to resist cold, and they will encounter severe storms and a goodly number of "exceptional" days when they will revile the wind, the dust, the great changes of temperature, the low-hanging clouds, and will avow that the weather is no better than at home! They will find a winter climate by no means so seductive as that of more southern latitudes, but they will experience some of the finest winter days imaginable, and a sunshine so warm that I have been able to sit out in it comfortably when the mercury was only 2° above zero. Moreover, they can stay here, if it suits them, the year round without the necessity of fleeing before a spring thaw or a dangerous summer heat.

My winter's experience may be of some slight value in showing what can be accomplished here in the way of outdoor life by a person too feeble to take any vigorous exercise, such as horseback-riding, walking, or climbing—a person, in short, whose only resources are sitting on a piazza or driving. Asking pardon for so many personal details, I will say that I am less sensitive to cold than the average, and enjoy a remarkable immunity from taking cold. During the past winter I have scarcely spent an hour in-doors (except at meal-time) when the weather allowed me to be out, having even taken advantage of the hours before breakfast. I have had the use of the largest and most sheltered piazzas in town. I have been out far more than any other invalid in the hotel, although nearly all were stronger than I. I have sat out many days when not only no other invalid in the hotel but not even my well friends were able to keep me company on account of the cold. I have often sat out, bundled up in ulster and steamer-rug, when there was no pleasure in it whatever except that which comes from the consciousness of doing one's duty! I have been able to drive in very cold winds and in snow-storms without any apparent harm. I therefore infer that I may be taken

* "Health Resorts of Colorado Springs and Manitou," S. Edwin Solly.

† "Analysis of Signal Service Statistics," Dr. Samuel A. Fisk.

to represent the outside limit of what an invalid, in my condition regarding exercise, can do in the way of out-door life. I should say that I represent rather more than such an invalid is *likely* to do, for sick people with reduced energy, especially females, are not greatly disposed toward going out when it involves much discomfort or trouble. Simply the necessity of much wrapping up always acts as a deterrent, and so do such things as cold, wind, and dust. From the 1st of September to the 1st of May I have been confined to the house by bad weather forty-two days—that is, there have been forty-two days on which I have not been able to go out even one hour, and such may fairly be reckoned as days in-doors. Of the remaining days there have been many when I could only be out from two to four hours, and when being out was a burden to the flesh. This record is satisfactory enough to me, but it shows more obstacles in the way of going out than most people anticipate from what they read and hear before coming.

I give these facts simply for what they are worth, and I am quite ready to admit that my experience may relate to an unusually bad season. I am inclined to believe, however, from talking with many old residents, that the past winter here has been about an average one—neither specially good nor specially bad. In the early part of the season there was an unbroken succession of forty-five pleasant days. Since then the weather has been variable, without long periods of either fair or foul, and the spring has been more backward and unpleasant than usual. There have been no very severe storms, and, although the mercury has been as low as 22° below zero, there has been no intense cold of long duration. While there has been a very heavy snowfall on the mountains, there has been very little in town—about fourteen inches according to my rough measurements—and there has been the usual absence of rain.

The perfect climate, of course, does not exist. All have serious objections. That of Colorado will hold its own in any fair comparison. Those who thrive in it easily overlook its defects, and are often entirely blind to them; those who do not may naturally be expected to magnify them. While it is foolish to make too much of them, as I may have done here, it is equally foolish to conceal or deny them.

The attractions of Colorado Springs, aside from its climate, strike invalids very differently, as might be expected. It is certainly an exceptionally pleasant town, and, considering its age, a remarkable one. For a permanent residence, it offers inducements which are probably not equalled in any of the other high-altitude resorts. There are handsome residences, excellent society, good roads, gas, water-works, and many other advantages. Most invalids here keep house, and find in domestic and social life all the pleasure they desire. To those coming for a brief stay in a hotel or boarding-house, the place may seem dull. If they have obtained their ideas of it from the publications of enthusiastic newspaper correspondents, railway corporations, and other interested parties, they are apt to be grievously disappointed. If they have been led to imagine a picturesque village, nestling at the base of snow-clad mountains, with pine groves, shady walks, pretty shops, and groups of in-

valids drinking healing waters from embowered springs, so much the worse for them. The mountains, the pine-trees, the springs and baths, are all several miles away, and the “shady promenades with seats to rest the stranger” exist only in the imagination. One need not expect to find here those diversions which the European resorts provide, and which lead so many of our countrymen to prefer them to our own. Hotels suitable for sick people are not plentiful in “the new West,” and he who supposes that he is going to roam comfortably over this elevated plateau from here to the city of Mexico will reckon without his host, literally. Those who expect to cure themselves speedily by “going on a ranch” will do well to investigate this form of pastoral life most thoroughly before adopting it. Lovers of fine mountain scenery can be gratified here. Colorado, like so many other sections of our great republic, is “the Switzerland of America,” and one of her recent eulogists has made things look rather blue for her rivals. “It is customary at the present time,” he says, “to speak of Colorado as the Switzerland of America. But the day is not far distant when appreciative observers will speak of Switzerland as the Colorado of Europe!” Surely nothing better than this could be desired.

Colorado can easily afford to rest on its own merits, which are indisputable, and is only injured by much of the indiscreet praise bestowed upon it by its friends. Despite all objections which may be raised, the climate is probably, as we have already said, the very best of its kind at present available for invalids, and destined to grow in popularity as its merits become more accurately understood.

COLORADO SPRINGS, May, 1884.

A SUCCESSFUL CASE OF LAPARO-HYSTERECTOMY FOR UTERINE FIBROIDS.*

By ELY VAN DE WARKER, M. D.,

SYRACUSE, N. Y.

On November 13, 1883, I was called, in connection with Dr. John Van Duyn, to examine Mrs. B., aged thirty-eight, a small brunette, married fourteen years, with one child three years old. On inspection, the abdomen was enlarged in excess somewhat of the ninth month of pregnancy, but not uniform in contour, as the umbilicus was distorted nearly three inches to the right. Fluctuation was marked, but diffuse, to the left and lower portion of the abdomen, well defined by what was evidently a cyst-wall in the upper portion, and was absent on the right side. There was general dullness on percussion except over the colon on the left side. A hypodermic needle inserted in the middle line gave us a small sample of coffee-colored fluid, which coagulated by heat and redissolved on the addition of acetic acid into a fine, flocculent precipitate. Examining through the vagina, we had difficulty in reaching the cervix uteri; owing to its high situation, it was crowded to the left and forward. A sound was with some difficulty introduced into the uterine cavity, which gave a measurement of seven inches. Its direction was obliquely to the right. Manipulation of the tumor through the abdominal walls imparted free movement to the sound. With the patient in the knee-face position, the tumor did not re-

* Read by Dr. Paul F. Mundé before the New York Obstetrical Society, March 4, 1884.

The ligature upon the uterine stump has not been removed, and has given no trouble.

The case is placed upon record for the following reasons: First. The vitality of the stump was preserved beyond the ligature by compression with the ligature just sufficient to arrest active hæmorrhage, while oozing was checked by slight contact with the actual cautery. In this way we avoided a large sloughing mass in the open abdominal wound, as is the case after the use of the *serre-nœud*, or the elastic ligature of Hegar. Second. By securing early union of the surface of the stump to the abdominal wall by careful coaptation of the peritonæum around it (Hegar), and thus closing the cavity of the abdomen. This was secured by my method, but was violated by the drainage-tube, which I regard as a mistake. Third. The free use of corrosive-sublimate solution as an antiseptic, which was employed in preparing the ligatures, dressing the stump, and in irrigating the drainage-tube and vagina.

The present condition of Mrs. B. deserves one comment. Previous to the operation she was the subject of mild mania. Before her convalescence was established she became entirely sane, and remains in that condition.

Book Notices.

A Practical Treatise on the Medical and Surgical Uses of Electricity; including Localized and General Faradization. Localized and Central Galvanization, Franklinization, Electrolysis, and Galvano-cautery. By GEORGE M. BEARD, A. M., M. D., etc., and A. D. ROCKWELL, A. M., M. D., etc. Fourth edition, revised by A. D. Rockwell, M. D., with nearly two hundred illustrations. New York: William Wood & Co., 1883. Pp. xxx-758.

Hand-book of Electro-Therapeutics. By Dr. WILHELM ERB, Professor in the University of Leipzig. Translated by L. PUTZEL, M. D., Neurologist to Randall's Island Hospital, etc. With thirty-nine woodcuts. New York: William Wood & Co., 1883. Pp. xi-366. [Wood's Library of Standard Medical Authors.]

THE two books before us are both formal didactic treatises on electro-therapeutics, and both are thoroughly practical in their aim, and thus address themselves rather to the practitioner of medicine than to the physicist or merely scientific man. Emanating, as they do, from men of long experience in the subjects of which they treat, they must command our attention; and, as representative of the latest discoveries in a field as yet imperfectly explored, they will be received with much interest by the profession.

Although in general treating of the same topics and following the same plan, the books differ somewhat in scope. Beard and Rockwell's treatise, as its name indeed implies, devotes especial attention to the physics of the subject, and goes with considerable detail into the principles of magnetism and of frictional, galvanic, and faradaic electricity. We must confess to our belief that in this regard the authors have erred in the direction of over-fullness, in that they have introduced much matter of mere historical or theoretic importance such as the practicing physician does not need to know, or, if he does, can learn much better by referring to special works on physics. More-

over, a certain obscurity of expression and looseness in the use of terms render this part of the book additionally unsatisfactory.

We refer here more particularly to the definitions and to the enunciation and explanation of the different laws of electricity. Erb, on the contrary, compresses into a few pages all the data of electro-physics that are necessary for a comprehension of electro-therapeutics, and, of necessity, in so brief a space includes nothing irrelevant.

On the other hand, in the consideration of electro-physiology and electro-diagnosis, where Erb is peculiarly full and satisfactory, Beard and Rockwell's book is meager and defective. The reaction of degeneration, for instance, which in Erb claims the greater part of two chapters, is disposed of by the American authors in a paragraph.

These shortcomings in Beard and Rockwell's treatise are, it will be perceived, due chiefly to faulty compilation and failure in properly subordinating the topics treated of. When, however, the authors no longer confine themselves to what others have done, but give the results of their own experience, much greater value attaches to their propositions, and, accordingly, the section on electro-therapeutics is by far the most satisfactory of the book. It is this that has made the latter a most valuable addition to the literature of electricity; and, as a guide in the practice of electro-therapeutics, we can cordially commend it.

When, therefore, in spite of this encomium of the American work, we assert the much superior value of the German, it will be understood that we believe the latter to possess a very great degree of merit indeed.

In fact, we can hardly imagine a book more satisfactory, for purposes both of study and of reference, than Erb's electro-therapeutics. In the combination of fullness of statement with careful condensation, in accuracy of enunciation, and in the certainty of the knowledge imparted, it leaves little to be desired.

The translation of Dr. Putzel has been faithfully executed; and, except in the matter of cuts and of typography, this edition is an excellent transcript of the original.

A Year-Book of Therapeutics for 1883. Edited by ROYAL W. AMIDON, M. D. New York: G. P. Putnam's Sons, 1884. Pp. viii-250. [Price, \$1.50.]

DR. AMIDON'S year-book of the progress in therapeutics during 1883 is a fairly complete *résumé* of the more important items contained in the journals for the year. The arrangement of topics is alphabetical—perhaps the best order on the whole in a work of this sort.

The abstracts, in general, are well made, although we have noted several mistakes which a little more care in the transcription might have remedied. For instance, the very first article—that upon acetal—contains a wrong statement of the formula of diethyl acetal and of its boiling-point, and the dose of dimethyl acetal is given as one half that of ordinary acetal, whereas the original statement is that it acts with only one half the power of acetal.

Again, on page 16, the sentence reading "It is advised as an injection in gonorrhœa" leaves us in doubt as to what is intended, while a reference to the original shows that it was hydroquinone which was recommended.

In these two cases, as in some others, the error, we should suppose, was due to relying upon intermediary sources of information—a French abstract, for instance—instead of referring to the German original.

Probably the same explanation will serve for the instances,

two of which we have noted, in which two abstracts of the same paper are given as distinct articles and under separate headings. For example, Diani's "chlorinated carboic acid" (p. 41, abstract from the "Bull. gén. de thérap.") is unquestionably the same as the "trichlorated phenol" of p. 197 (abstract from the "Lond. Med. Record"), while the more accurate designation chemically, and the one which we believe the author himself employed, is trichlorophenol.

It is not with the purpose of mere fault-finding that we point out these errors, which, after all, appear of only trifling moment. In a book of this sort we have the right to expect accuracy even in details, and a little care might have obviated all criticism.

The good points of the book are seen in its longer articles, in the selection of which much good judgment has been shown. The most important of these are the articles on chloride of barium, by Ringer and Sainsbury; Weir's article on corrosive sublimate, which will be familiar to readers of the "Journal"; Uthoff's paper on eserine; the elaborate and valuable dissertation, covering fifty pages of the book and translated especially for it, upon the physiological action of iodoform, by Rummo; Nancrede's paper on inflammation and the therapeutic value of local depletion; and the articles upon bichloride of methylene and other anesthetics and upon psoriasis. The two *revues critiques* on resorcin and on tuberculosis make us wish that the author had thrown more of his compilations into this form, since, in our opinion, there is no more satisfactory way of presenting the results of a number of papers on related subjects than by their collection in one article, where they may be compared, contrasted, and criticised.

In spite of the criticism with which we started out, and of the justice of which we feel persuaded, we believe that the book is of value, and have no hesitation in recommending it to our readers—both as intrinsically worth perusal and as furnishing a guide to sources of valuable therapeutic information.

Opera Minora: a Collection of Essays, Articles, Lectures, and Addresses, from 1866 to 1882, inclusive. By EDWARD C. SEGWIN, M.D., Clinical Professor of Diseases of the Mind and Nervous System in the College of Physicians and Surgeons, New York, etc. New York: G. P. Putnam's Sons, 1884. Pp. x-687. [Price, \$5.]

As is mentioned in the title, this volume contains nothing but what has already appeared in print, and hence has been subjected to criticism. When we consider the magnitude of medical literature, and of the literature of diseases of the nervous system in particular, we must confess that the publication of a volume of miscellaneous essays is somewhat venturesome, unless intended for private distribution, as Dr. Seguin tells us the original intent was in this case. Emanating from a writer of the scholarship and acumen of Dr. Seguin, however, such a publication comes rather in answer to a requirement than otherwise, and we feel certain that his friends and the pupils who have listened to his lectures—models of clearness—at the College of Physicians and Surgeons for the past few years, will be glad that the original intention was changed and the edition made sufficiently large to admit of its being put upon sale. As has been said, professional criticism has already established the scientific status of the contents of the book, and that will remain. As a literary production it must also take a high rank, and we hazard the assertion that there are few books in English or American medical literature with so pure, readable, and intelligible use of our language as will be found in this. Dr. Seguin has been fortunate in the choice of an editor in Dr.

Amidon, and, as the author courteously acknowledges in his preface, certain important and meritorious features of the book are due to Dr. Amidon.

A Manual of Obstetrics. By A. F. A. KING, M.D., Professor of Obstetrics and Diseases of Women and Children in the Medical Department of the Columbian University, Washington, D. C., and in the University of Vermont, etc. With fifty-nine illustrations. Second edition. Philadelphia: Henry C. Lea's Son & Co., 1884. Pp. xx-25 to 338, inclusive.

WE are glad to observe the token which this second edition gives that Dr. King's work has been properly appreciated by the profession. The author's plan in its preparation was not an ambitious one; he has contented himself with giving an abstract of the current teaching in obstetrics, but he has done it so well, has brought it so within the comprehension of the general reader, and has so infused into it the unmistakable marks of his personality, as to make it a hand-book of unusual excellence.

BOOKS AND PAMPHLETS RECEIVED

A Treatise on Chemistry. By H. E. Roscoe, F. R. S., and C. Schorlemmer, F. R. S., Professors of Chemistry in the Victoria University, Owens College, Manchester. Vol. III. The Chemistry of the Hydrocarbons and their Derivatives: or Organic Chemistry. Part II. New York: D. Appleton & Co., 1884. Pp. ix-655. [Price, \$5.]

Diseases of the Heart and Thoracic Aorta. By Byrom Bramwell, M.D., F. R. C. P. E., Lecturer on the Principles and Practice of Medicine, and on Practical Medicine and Medical Diagnosis, in the Extra-academical School of Medicine, Edinburgh, etc. With 317 illustrations. Edinburgh: Young J. Pentland, 1884. Pp. xvi-788.

The same. New York: D. Appleton & Co., 1884. [Price, cloth, \$8.]

Lal. A Novel. By William A. Hammond. New York: D. Appleton & Co., 1884. Pp. 466.

Notes on Operations on the Eye. By Ram Kishen, L. M. S., Lahore, Assistant Surgeon. Lahore: "Tribune" Press, 1884. Pp. 2-ii-78-iii.

Del Bacilo de Koch en la Tuberculosis. Importancia del Examen Microscópico de los Esputos en el Diagnóstico de la misma, y Técnica Especial para la Investigación de dicho Parásito. Por el Dr. Leopoldo Lopez García, Director, Propietario y Profesor Libre de un Laboratorio de Histología, etc. Madrid: Establecimiento Tipográfico del Hospicio, 1884. [Price, 75 céntimos.]

Annual Announcement of the Medical Department of Niagara University, Buffalo, N. Y. 1884-'85.

Announcement and Catalogue of the National Medical College (Medical Department of the Columbian University), Washington, D. C. 1884-'85.

Sixth Annual Announcement of the Central College of Physicians and Surgeons, Indianapolis, Ind. 1884-'85.

The University of Minnesota, Minneapolis, 1883-'84. College of Medicine, Special Announcement, May, 1884.

Third Annual Announcement of the Hospital Medical College, of Evansville, Ind. 1884-'85.

Second Annual Announcement of the Northwestern Ohio Medical College, Toledo, O. 1884-'85.

Tenth Annual Announcement of the Medical Department of the University of Tennessee, Nashville Medical College. 1884-'85.

Announcement of the Fourth Annual Session of the Medical Department of the University of Denver. 1884-'85.

American Veterinary College, New York. Annual Announcement. Session of 1884-'85.

First, Second, and Third Annual Reports of the Secretary of the State Board of Health of West Virginia, for the Years ending December 31, 1881, 1882, 1883.

Twelfth Annual Report of the Board of Health of the City of Boston, for the Financial Year 1883-'84.

Poisoning by Canned Goods. By John G. Johnson, M. D., Brooklyn. [Reprint from the "Medico-Legal Journal."]

A Case of Left Inguinal Colotomy for Imperforate Rectum; Recovery. By W. H. Haynes, M. D., New York. [Reprint from the "American Journal of the Medical Sciences."]

Dott. Pietro Panzeri. Il Corsetto Gessato di Sayre nella Spondilite. Con sei figure. [Reprint from the "Gazzetta degli Ospitali."]

Di Due Rare Deformità della Gamba corrette coll' Osteotomia. Nota del Dott. Pietro Panzeri. [Reprint from the "Archivio di Ortopedia."]

La Cura delle Deviazioni Rachitiche degli Arti Inferiori. Per il Dott. Angelo Arcari. [Reprint from the "Gazzetta Medica Italiana Lombarda."]

Sixth Annual Announcement and Catalogue of the Medical Department of Arkansas Industrial University. Session of 1884-'85.

Medical College of Ohio, Cincinnati. Sixty-sixth Annual Announcement. Session of 1884-'85.

Eighth Annual Announcement of the Georgia Eclectic Medical College, Atlanta, Ga.

Report on Surgery. By Roswell Park, M. D., Professor of Surgery in the Medical Department of the University of Buffalo. [Reprint from the "Weekly Medical Review."]

Select Topics in the Surgery of the Nervous System. By Roswell Park, M. D., Professor of Surgery in the Medical Department of the University of Buffalo. [Reprint from the "Weekly Medical Review."]

Librairie J.-B. Baillière et Fils. Catalogue général des livres anciens et modernes, français et étrangers, de médecine, de chirurgie, de pharmacie, de l'art vétérinaire, et des sciences qui s'y rapportent. Paris, 1884.

College of Physicians and Surgeons, Medical Department of Columbia College, in the City of New York. Seventy-seventh Annual Catalogue and Announcement.

Correspondence.

LETTER FROM VIENNA.

Abdominal Surgery.—Porro's and Freund's Operations.—Deaths in the Faculty.—Female Students.

VIENNA, July 10, 1884.

THE summer semester closes on the 15th, though it had practically come to an end on the 1st of the month, when several of the principal lecturers ceased their attendance.

However, the surgical and gynecological clinics are still in full blast, and the past week has witnessed several interesting operations, among which was a Porro by Spaeth, an œsophagotomy by Billroth, the removal of an echinococcus-cyst of the liver by Albert, and several laparotomies. Though some of the capital operations here are to be classed rather among the curiosities of surgery as regards their practical value, there is a certain dash and boldness in their conception and execution which can not fail to impress one who has been accustomed to our more conservative ideas.

At the same time it must be confessed that the results are

often so gratifying as to apparently justify the most heroic methods of treatment.

There have been only two cases of Porro's operation in Vienna during the past year (against four the previous year), the second of which I was fortunate enough to witness a few days since. The patient, a multipara, was a dwarf with a pelvis of 4-4½ ctm. in the conjugate. The operation was performed with such rapidity that in less than five minutes the child was crying in the nurse's arms, while the hæmorrhage (which was very severe, as the placenta was attached to the anterior wall, and hence was divided in the uterine incision) was completely controlled with a coil of rubber tubing. The patient succumbed to peritonitis on the sixth day, a termination which has happened in four out of the last six cases.

Professor Carl Braun has performed not fewer than ten laparo-hysterotomies for fibroid tumors during the present semester, only one of which has resulted fatally. When we remember the formidable nature of these operations, and the facts (which I emphasized in a former letter) that they are performed in a crowded lecture-room and that the assistants are in constant contact with the cadaver, the statistics will appear surprising. They certainly show what a scrupulous attention to cleanliness, without the use of the spray, can accomplish.

A Freund's operation was attempted (but not completed) at the same clinic this week. Having now witnessed four of these terrible affairs, all of which terminated disastrously, I am not prepossessed in favor of an attempt to add a few months to a woman's life against such desperate odds. I mentioned the fact that Billroth had recently performed an œsophagotomy for stricture. The entire proceeding occupied about four minutes, and was perfectly successful.

Three members of the medical faculty have been removed by death during the past ten days—Professor Arlt, and Dr. Kolisko and Dr. Massari. The latter, as is doubtless known to most of your readers, was the son-in-law of Professor Carl Braun, and has occupied the post of Docent in gynecology during the past six years. He was soon to become a professor. Arlt had just succeeded to the position formerly occupied by Stellwag. He was in his sixty-eighth year, and hence would shortly have been retired.

Reports of the cholera do not trouble us much, but I have noticed that there is a sharp eye kept on all hospital patients with suspicious symptoms. The weather is excessively hot, but the sanitary condition of the city seems to be very fair; that is saying a good deal.

There is not much gossip to retail at present. Just now there are rather fewer Americans in Vienna than usual; perhaps it is a little early for the summer gleaning to begin, after the departure of the army of students. A goodly number of our countrymen are not men at all, for a little colony of fair M. D.'s has been established in the hospital, and is quietly and yet pluckily solving the problem of co-education. In justice to our professional sisters I would say that, however opinions may differ as to the advisability of their breathing the Vienna atmosphere, those who have made the experiment deserve in the main only credit for their combined modesty and firmness. The "strong-minded" element is wanting, and the ladies whom I have met have received such polite attention as we do not generally credit to Germans. It forms a very interesting break in the daily "struggle for supremacy" at lectures to see our fair friend standing up for her rights and claiming her own little share. Perhaps her influence will yet act as a soothing syrup to the untutored Russian. That were devoutly to be wished! At any rate, the doubt as to whether a modest woman can study medicine side by side with those of the other sex has been dispelled by the plucky little American ladies.

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THE INFECTIOUS CONVALESCENT.

SEVERAL weeks ago we published the substance of a circular addressed by the secretary of the State Board of Health of New York to a number of persons who, either from their knowledge of medicine or from their experience with schools, were assumed to be capable of throwing light on a question with which the board justly felt itself called upon to deal—the question, namely, as to the length of time that ought to elapse after a patient, especially a pupil at a school, was so far convalescent from an infectious disease as to be able to go about before it became safe for persons susceptible to the infection of the disease to come in contact with him, the matter of fomites being left out of account. At the time we stated our appreciation of the importance of the inquiry, and expressed our hope that the question would meet with adequate discussion by medical men. While we still trust that the circulars sent out by the secretary have in many instances led those to whom they were addressed to furnish the board with data bearing upon the matter, we regret to say that, so far as we have been able to ascertain, the subject has not met with consideration by the profession in any other form. When we reflect that the essential question is one of those with which practicing physicians have to deal almost daily, and that they must, therefore, have formed some ideas and accumulated some facts tending to its solution, the unbroken silence that has been maintained is somewhat remarkable, not to say discreditable. Now that the matter has been broached, however, we are satisfied that it will not be allowed to fall flat, but will be made the subject of discussion by our medical societies and by individual physicians.

A cognate matter, we are pleased to observe, is meeting with attention of a very practical sort, although not in this community. We refer to a movement recently set on foot in London for providing proper retreats for infectious convalescents, where their comfort and the demands of their health will be duly attended to without subjecting them to the enormous expenditure of money which, as things are managed now, seems to be the only alternative for the convalescent who is sufficiently conscientious to pay some regard to the safety of his fellow-men while seeking change of air for himself. This degree of unselfishness is seldom met with, it is true, but perhaps this is scarcely to be wondered at, considering the many circumstances that tend to nip it in the bud, and there is no knowing to what extent it might be developed with a little assistance. That there is great need of such aid to well-meaning persons, as well as of a certain compulsion in the case of those who ignore the rights of society, is most vividly set forth in a recent number of the "Pall Mall Gazette" by Mr. H. C. Burdett, with whose in-

terest in the subject of hospitals and their management many of our readers are acquainted. Mr. Burdett states that he lately found himself "boxed up" in a railway carriage with a man convalescing from small-pox, with no possibility of escape for an hour, for it was on an express train, which was not to stop for the first fifty miles. The convalescent was on his way to a fashionable seaside resort, where he had engaged lodgings. In another instance, lodgings were relet to the mother of a large family at the very time when one of the rooms was occupied by the body of a person who had died of small-pox. In still another case, some well-to-do people, heedless of their physician's remonstrances, took their children, who were then convalescent from scarlet fever, to a popular watering place; and, not content with infecting the railway carriage and one set of apartments, changed the latter for various reasons three times within ten days, and so left the seeds of disease in three houses at least. Mr. Burdett aptly compares a convalescent under such circumstances to a pepper-box filled with infection and shaken over the heads of the community.

As a means of breaking up this wholesale sowing of infection, the Home Hospitals Association, of London, was to hold a meeting on the tenth of June, for the purpose of taking steps toward the establishment of a Convalescent Home Hospital. The plan contemplates the reception of all persons recovering from sickness, as at a hotel, but with this essential difference, that ample provision is to be made against any inmate being a source of danger to the others. There will be a resident medical superintendent, a corps of skilled nurses, and special cooking arrangements. On the one hand, the noise, the publicity, and the bustle of a hotel will be avoided, and, on the other hand, the damp sheets, the slipshod attendance, and the general discomfort of ordinary lodgings. Arrangements will be made for conveying convalescents from their own homes to the seaside, a proper ambulance taking them to and from the railway station, and their isolation being secured during the journey by rail, after which the railway car will be disinfected. It will readily be understood that such a work as this is by no means easy of accomplishment, but we look forward to the execution of the London plan with an interest not devoid of confidence in the result, for the undertaking is in good hands. In the event of its success, it can not be long before our own people will be inclined to follow the example.

A VIVISECTIONIST'S PURGATION.

FROM a certain piece of property in the French village of Colombes the howls of about forty dogs and the screeches of more than that number of cats are borne to the unwilling ears of the neighboring residents. These animals are described as by no means the choicest of their respective kinds, and it is alleged against them that, besides their unmelodious cries, they give forth odors which make the quarter decidedly unpleasant. There are those, indeed, who aver that the premises on which the animals are kept constitute practically a sort of lazaretto, and that the effluvia arising therefrom are a source of danger to their health. On this account the occupant of the property has

been proceeded against in the courts, and, as we learn from the "Progrès médical," has been condemned to pay a fine of five francs. The person thus mulcted is an old lady who makes it her business to gather in all the stray dogs and cats that she meets with on the streets.

This lady is no less a person than the widow of the great physiologist, the late M. Claude Bernard, and her eccentric behavior is accounted for in this wise: M. Bernard, as is well known, practiced vivisection, but early in the course of his married life his wife became a violent opponent of the practice, and their disagreement in the matter is understood to have made their life anything but a happy one, and finally to have brought about their separation. M. Bernard having at length died, his relict's old tenderness has risen from its ashes, and, as the story is told, she has gone to work systematically to expiate his offenses against the lower animals by showing kindness to as many stray dogs and cats as opportunity may allow; her idea being that, when at length she has succored as many distressed brutes as he was the means of slaying, his purgation will have been accomplished vicariously, and her soul and that of her late husband will be ready to meet in Paradise. How unfeeling it is of the people of Colombes to interfere with the prosecution of this scheme!

MINOR PARAGRAPHS.

A MEDICAL NOVELIST.

THAT a member of the medical profession should have chosen to write fiction is nothing specially new, in view of the literary achievements of Goldsmith, Smollett, and a number of others who might be mentioned, but at first sight it seems somewhat remarkable that so busy a man as Dr. William A. Hammond should have followed this course. The wonder diminishes, however, when we cast a look back at his articles published twelve or fifteen years ago, in a psychological journal of which he was the editor, which, though nominally medical, were really quite indicative of his *penchant* for romance, and gave abundant evidence that, if he ever did actually take up with literature as an occupation, he would make a creditable show. That he has done so, in the novel called "Lal," recently published, can not be questioned, we think. The construction of the story is artistic, and the style in which it is told is vigorous and clear. Here and there we catch a glimpse of the medical element in the author's training, but never of anything like a strained attempt to make a show of medical learning. Having avoided that rock in his first venture, the author may in future give further play to the romantic vein which runs through the observation of a medical man, and yet not bring up against it, if, as we understand his purpose to be, he writes more works of fiction.

NEWS ITEMS, ETC.

The Cholera in Europe.—During the week the outbreak in France seems to have abated decidedly in virulence, but the territory affected has been enlarged, and the disease has crept into Italy. Thus far, the fatality has not been very great, and it is to be hoped that the worst has been seen of the visitation, but it should be borne in mind that great epidemics have sometimes begun with no more virulence, and that intervals of comparative quiescence have been known to be followed by terrible recrudescences. It may be, as the Health Officer of the port of New York is reported to have suggested, that the decline in the

number of victims in Toulon and Marseilles is to be imputed rather to a falling off in the "raw material" than to any decrease in the actual virulence of the disease. Certainly the state of the poor people left in those cities is sufficiently appalling, but, unaccountable as the doings of a panic-stricken population are apt to be, it is difficult to realize that the reports can be true to the effect that hostility is shown toward the physicians, so that, as it is said, it is dangerous for them to go about the streets after nightfall. During the week a death supposed to have been due to cholera took place on a Mississippi River steamboat, the victim being a child belonging to a family from Mexico, and the Surgeon-General of the Marine-Hospital Service at once took prompt and most appropriate measures to prevent the spread of infection; but it soon became reasonably certain that the disease of which the child died was not cholera, but the ordinary inflammatory diarrhoea of infants.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending July 29, 1884:

DISEASES.	Week ending July 22.		Week ending July 29.	
	Cases.	Deaths.	Cases.	Deaths.
Typhus	3	1	0	0
Typhoid Fever	20	6	21	9
Scarlet Fever	51	16	50	9
Cerebro-spinal meningitis ..	4	4	5	5
Measles	164	31	129	27
Diphtheria	27	17	31	19
Small-pox	1	0	0	0

Yellow Fever is reported as still rife on the Isthmus of Panama, and to be spreading rapidly in the State of Sonora, in Mexico. In consequence of the latter information, the Surgeon-General of the Marine-Hospital Service has instructed our quarantine official at Nogales to exercise the utmost vigilance. The sanitary officers of New Orleans have authorized a formal statement to the effect that a post-mortem examination in the case of death recently attributed to the disease in that city has failed to support the assumption that the case was one of yellow fever.

Small-pox.—Several cases are reported to have come to light in Hoboken, N. J., since last Sunday, and Tuesday night a fishing smack anchored off Stapleton, Staten Island, from which a man went ashore and was discovered to be suffering with the disease. As the vessel was not within the jurisdiction of the Health Officer of the port of New York, the local sanitary officers were obliged to take charge of the man. No new cases have been reported in this city, notwithstanding the exposure that must have happened to many persons by reason of the travels of a man sick with the disease, as was related in our issue for week before last.

Actinomycosis.—A case of this disease in the human subject is said to be under observation in the Cook County Hospital, in Chicago.

The late Dr. Ambler.—A brass tablet has been prepared, to be placed in the village church at Culpepper, Va., bearing the following inscription:

JAMES MARKHAM AMBLER,

PASSED ASSISTANT SURGEON, U. S. NAVY,

Died on the banks of the Lena River during the memorable retreat of the ship's company of the U. S. Arctic steamer Jeannette, in the year

— 1881.

His sense of duty was stronger than his love of life.

In memory of his noble example and heroic death this tablet is erected by the medical officers of the United States Navy.

The "Weekly Medical Review" announces that, after the first of January, it will be enlarged, and that a special department of obstetrics and gynecology will be added, under the editorial management of Dr. G. J. Engelmann, of St. Louis. It will then be known as "The Weekly Medical Review and Journal of Obstetrics and Diseases of Women." The special department will be paged separately, so that it can be bound by itself. We congratulate the "Review" on having secured Dr. Engelmann's services, and trust that the success of its proposed plan will be complete.

The National Board of Health held a meeting in Washington on Wednesday, July 30th, at which officers were elected as follows: President, Dr. James L. Cabell, of Virginia; vice-president, Dr. Stephen Smith, of New York; secretary, Colonel George E. Waring, of Rhode Island.

Recent Paris Theses.—According to the "Progrès médical," the following theses have recently been read: July 16th: The Points for Auscultation in Obstetrics, by M. Cantacuzène; Version in Contracted Pelvis, by M. Grisel; The Poison Apparatus of the "Vive" Species of Fish, by M. Gressin; The Vaso-Motor Nerves, by M. Karline; Arabian Medicine in Algeria, by M. Ben Larbey; The Treatment of Cold Abscesses by the Injection of Iodoformized Ether, by M. Mattei; Syphilitic Phthisis in the Adult, by M. G. Jacquin. July 17th: Congenital Ascites, by M. Poirier de Narçay; Rheumatism during Pregnancy, by M. Alexandre; Osseous Lesions in Convalescence from Typhoid Fever, by M. Gelez; Influenza, by M. Chauveau; The Simultaneous Evacuation of Hydatid Cysts of the Liver into the Biliary Passages and the Thoracic Cavity, by M. Reymondou; The Treatment of Orchitis by Compression and Sweating, by M. Boudault; Some of the Effects of Peripheral Excitations in Hystero-epileptics while Awake and when Hypnotized, by M. Magnin; Vaginismus, by M. Gillard. July 18th: The Inguinal Adenitis of Blennorrhagia, by M. P. Jacquin; Vesico-vaginal Fistulae and their Treatment by Secondary Immediate Reunion, by M. Ebeid; The Etiology of Acute Articular Rheumatism, by M. Pagnier; Asthenia of the Connective Tissue, by M. Heulez; High Temperatures and Simulated Temperatures, by M. Roussel.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from July 20, 1884, to July 26, 1884:*

WRIGHT, J. P., Major and Surgeon. Granted leave of absence for one month, on surgeon's certificate of disability. Par. 3, S. O. 89, Headquarters Department of Texas, July 17, 1884.

HARTSUFF, ALBERT, Major and Surgeon. Leave of absence extended one month. S. O. 79, Headquarters Division of the Missouri, July 18, 1884.

REED, WALTER, Captain and Assistant Surgeon. Relieved from duty at Fort Sidney, Nebraska, and ordered for duty as Post Surgeon, Fort Robinson, Nebraska, relieving Assistant Surgeon Henry McElderry, U. S. A. Par. 2, S. O. 62, Headquarters Department of the Platte, July 23, 1884.

BENHAM, R. B., First Lieutenant and Assistant Surgeon. Assigned to duty at Fort Brown, Texas. Par. 1, S. O. 90, Headquarters Department of Texas, July 19, 1884.

STRONG, NORTON, First Lieutenant and Assistant Surgeon. Granted leave of absence for two months, to take effect when relieved from duty in Department of the Platte. Par. 2, S. O. 68, Headquarters Division of the Missouri, June 27, 1884.

Society Meetings for the Coming Week:

MONDAY, August 4th: Chicago Medical Society (The Etiology, Pathology, and Treatment of Cholera, by Dr. J. H. ETHER-

IDGE; Cutaneous Therapeutics, by Dr. P. C. JENSEN; Some Remarks on Aneurysms, with a recent specimen, by Dr. J. A. ROBISON).

TUESDAY, August 5th: Elmira, N. Y., Academy of Medicine; Ogdensburg, N. Y., Medical Association; Medical Society of the County of Hudson, N. J.

WEDNESDAY, August 6th: Medical Society of the County of Richmond, N. Y.

OBITUARY NOTES.

Dr. George S. Burton, of East Greenwich, R. I.—Dr. Burton, best known as Surgeon Burton, of the Third Rhode Island Heavy Artillery, during the late war, died of consumption in East Greenwich, July 21st, in his fifty-first year. He was well known for his medical services and his personal bravery in the campaigns in South Carolina. After the war he began practice in Charleston, S. C., but the state of his health compelled him to go back to Rhode Island, and, so long as his health allowed of it, he continued to practice in East Greenwich. Dr. Burton was highly beloved and respected, both for his professional ability and for his character as a man and a scholar.

Dr. Dwight Ruggles, of this city, a graduate of the Philadelphia Medical College, in the class of 1849, died very suddenly on Friday, July 18th.

Proceedings of Societies

BUFFALO MEDICAL AND SURGICAL ASSOCIATION.

Adjourned Meeting of July 15, 1884.

The President, Dr. F. W. BARTLETT, in the chair.

The Status of the Midwife in Buffalo.—This was the title of a paper in which Dr. J. H. PRYOR presented certain facts concerning an abuse that had existed in Buffalo for years, and one which was constantly increasing. The nature of its cause, the magnitude of its influence, and the questionable character of its results made it a question of intrinsic interest to the profession—he referred to midwifery as practiced by the midwife. In certain districts of the city, where most of the inhabitants were recently arrived immigrants and foreign-born citizens who clung persistently to their native traditions and modes of life, many customs of a primitive type prevailed. The one outgrowth which interested us, because so closely allied to medicine, was the midwife. She was a woman of their class, and represented the level of their intelligence. The people among whom she sought employment summoned her because they had been accustomed to her assistance in other countries, where the scarcity of physicians made her desirable, if not obligatory; because the midwife performed a dual function and offered to act as *accoucheuse* and nurse for a moderate fee, generally three dollars or five dollars, which her patient could afford to pay; because they believed that the midwife was a safe attendant in ordinary cases, and could call a physician if the labor became complicated or tedious. The desire to economize, and the aversion to masculine help, which was sedulously encouraged by the midwife, had something to do with this selection. Even the superficial observer could detect the cause of this defective reasoning, as it appeared upon the surface. It was plainly ignorance. If these people were not generally ignorant, they showed deficient intelligence in this particular instance. It seemed fair to state that

no woman would willfully risk her life and that of her child in the hands of a blundering and ignorant person if she was acquainted with the dangers which surrounded the event of childbirth and appreciated the difference between such assistance and that which the skilled physician could offer. He adduced, as proof of this statement, that the business of the midwife was limited to sections of the city where ignorance most abounded. The numbers of the poor and ignorant increased rapidly, and the midwives multiplied accordingly. The certificates at the City Hall showed that there were over one hundred at work in Buffalo at the present time, and that last year about *two thirds* of the cases of childbirth were reported by them.

These facts stimulated an inquiry into their origin, the mode of their education, their qualifications, and their results to humanity. In the cities of Europe the midwife must possess a certificate of varying value, to show that she was qualified, before she was allowed to undertake her duties in the lying-in chamber. Here she had ever flourished without restraint or opposition. The many phases of progress had left her untouched and unmodified. She acquired her title by squatter sovereignty, and fixed her debt to society according to her own statute of limitations. To-day she originated, as she did in the barbarous ages, by the cry for assistance, and, like each new journal, supplied a long-felt want. A woman might be called to act in emergencies, and, continuing, make midwifery a vocation. The great proportion, however, accepted midwifery as the least laborious and most remunerative employment by which to earn a livelihood. This accounted for the large number of widows who acted as midwives. In either case, what were her recommendations? What had been her preliminary preparation? Her intellect was slight and untrained. Her education was meager. Placed in competition with enlightened people, the invariable law of fitness would oblige her to resort to physical labor as her proper place in the economy of the world. There was absolutely no other position demanding mental ability which she could fill. Yet she attempted to perform a work which only the well-equipped and broadest mind could master. He would not go deeply into her incapacity; it was too apparent. Unconscious of her ignorant condition, she would not correct it. As no plan of education had ever been enforced in this country, the midwife followed a wayward course, and was compelled to accept the limited knowledge she might think required and what experience would bring her. Her means of learning were therefore narrowed and confined to two sources. Many books upon midwifery, abridged, of course, had been written, and she could obtain them if she knew of their existence and desired them. Could she read them intelligently? Judging from the appearance of the certificates on file in the city, many of their number could not read or write correctly. Again, no woman of her mental caliber could study a book on midwifery, properly and understandingly, without any knowledge of the primary branches of medicine.

We now came to the only way left them to gain any knowledge which could be at all reliable—viz., experience. She entered the lying-in room to begin her training. What sad havoc must ensue as she went blundering on to the unsated time when she at last became what some considered a fairly trained midwife! The mothers who died and the children still-born could not be estimated, because they were recorded over physicians' signatures. The reader purposely avoided giving instances of reckless management which had come to his notice. Every physician had met with the different forms of suffering and despair which sprang from the lamentable ignorance of the midwife, who had been called by an English writer the Herod of society. Occasionally there was one who, appreciating her grave duty to womankind, consulted with physicians in times of doubt, and

improved by the contact. This added another way of advancement, which was commendable, but not apt to be over-indulged in. But inefficiency was her birth-mark. A defective training modified the material but slightly, and left her incompetent, as it found her unfitted. Let us fix the compass of her acquirements at a time when she was supposed to have arrived at a point which permitted of judgment. The truths which the midwife might gather were isolated, and no discrimination grouped them into a system from which precise data could be drawn. Yet her advance showed the reflection of many impressions which had left a changing influence, and been productive of a state of accomplishment colossal in its range of effort, but strikingly simple in its display of learning. There was a discrepancy between her pretensions and her actual worth. Perhaps, in a certain proportion of cases, the midwife, acting under the doctor's direction, would not be a dangerous attendant, because many labors needed no management beyond her capability. An attendance upon a case of pregnancy should begin before labor occurred. Many questions of nicety relating to hygiene and prevention called for superior judgment. Certain conditions might be present which, if not perceived and corrected, had a grave effect upon the mother and child, and so complicated the case as to carry it beyond relief. He would only mention deformities and diseases such as albuminuria, to illustrate his meaning. When a labor became protracted or tedious, the midwife used none of those instruments of precision which were such potent allies of the physician in assisting nature's intent. Why the forceps had never got into the midwife's satchel, along with her preparations of opium, chloral, and ergot, he did not know. Evidently not from fear of the law; else, why did she employ poisonous drugs, of the power and action of which she knew nothing, without interference? The patient of the midwife was denied that boon to womankind, the forceps, unless the physician was sought for to apply it. The indications and time for its use were left to the midwife's discretion, and the physician might rest assured that he would not be called until all her efforts had failed and every hope of success by other means had vanished. In the mean time the pressure of the child's head upon the adjacent parts might cause those distressing injuries which would afterward require operative procedure. The third stage of labor ushered in the time of greatest peril to the mother. She incurred the danger of puerperal hæmorrhage and convulsions, retained placenta, hour-glass contraction, etc., which only skill and varied resources could meet. The midwife frequently became the cause of such accidents through improper management, and was unable to rectify her blunder or the consequent condition. It was during this stage, also, that septic infection was strictly to be guarded against and the avenues of contagion carefully sentinelled. Of all the lamentable blunders which the midwife committed with her patient, her non-observance of the law of cleanliness was the most censurable. Imposing upon herself two senseless rules, to which she closely adhered, she changed the patient's clothing, bedding, etc., as little as possible, and she never made use of water unless it was absolutely necessary. True, some employed vaginal douches, but for this purpose they used a syringe which, like their catheter, was usually dirty, and had done long and continuous service in many cases. He recalled a case of negligence and ignorance on the part of a popular midwife who was administering douches to ten women daily. One had puerperal fever, nine had not. She used the same syringe for all, and did not change her clothing, nor did she perform any ablution to prevent contagion. The final result upon the nine healthy women he had never learned, but the case was significant.

Compare this novice with the physician. Each practiced

obstetrics. One brought intelligence, trained perceptive faculties, a careful education, and complete aid to the task; the other's credentials were ignorance, misdirected and untaught observation, deficient education, and glaring incompetency. One was equipped with accurate knowledge of one of the most scientific departments of medicine, almost mathematical in its exactness. The other depended upon a blind experience gained by her mistakes, from which she collected a chaos of facts which were uncertain in their application. The comparison revealed quite a wide difference in proficiency. He regretted to say that he could not furnish statistics to show the difference in results. The board of health of the city did not consider a midwife's certificate of still-birth valid, and it must be reported by a physician. Thus, no estimate can be made.

In the absence of any at home, he would cite some collected by Merryman in England. From 1657 to 1681, inclusive, a period of twenty-five years, when cases of childbirth were almost entirely in the hands of the midwife, there were 273,763 christenings and 14,397 abortions and still-born children. So that the children born dead were to those born alive as one to nineteen. During the twenty-five years from 1791 to 1815 the practice of midwifery was more generally conducted by men, and the number of christenings was 492,464, and the still-born children were 15,084, making a proportion of one to thirty—a diminution of more than one third. In the first twenty-five years there were 288,160 parturitions. Of the mothers, 6,686 died in childbirth; in the proportion of one to forty-three. In the second series there were 548,448 labors, and the number of deaths in childbirth were recorded as 4,684, or in the proportion of one to one hundred and eight. To no other cause could this diminution of mortality in childbirth be attributed than the more judicious management of women during and after labor.

To practice a specialty in medicine, one must have a diploma and be adjudged qualified in the various branches connected therewith. Blot out the tradition and customs of the past place the question in its true light, and what unwritten and mysterious law granted the midwife the privilege of practicing obstetrics, when, if she attempted ophthalmology, laryngology or any other special branch, a hue and cry would rouse the law to place her either in jail or in a lunatic asylum? The hope of a future competent midwife was delusive. She could never exist until she became a physician. That step would carry her into a different sphere and her past identity would be lost.

For the purpose of grouping the salient facts in a condensed form, he would resolve them into a series of propositions:

1. The midwife owed her origin and introduction into this country to ignorance, and she was fostered by a false custom engendered elsewhere. Her business was confined to localities where these were rife, and nowhere else was the demand manifest.
2. The need was supplied by women of a low grade of intelligence who were in every way unfit to undertake such a vocation.
3. Her incapacity, combined with the slight opportunity for improvement offered her, limited her means of education almost entirely to blind experience.
4. This method of self-instruction caused the women under her care much needless suffering and distress without any compensatory good.
5. For sufficient reasons—viz., mental inability, incomplete education, and never-ending probation—she never reached a period where she could be called at all proficient in her art.
6. Her qualifications for practicing a branch in medicine were best revealed by comparing her attainments with those of the physician.
7. This test proved her thorough incompetency and sug-

gested the only manner by which her condition could be changed or improved.

8. Nothing but determined interference could accomplish this aim, and, until it was attempted, she remained a dangerous factor in civilization.

During the last year a disposition to correct this abuse had been manifested in this State. Recently a method had been advised which resembled that adopted in Europe. A bill providing for the establishment of a college of midwifery, to educate and grant diplomas to these women, had been presented to the Legislature, but had not become a law. The only plea in favor of such a bill was that it might, after a lapse of time, elevate the standard by rejecting the very ignorant and supplying better facilities for attaining proficiency. The points of objection were numerous. It would be very difficult to crowd these women into such a college. Again, the conditions in this State were not similar to those in foreign countries. Elsewhere the midwife might be necessary; here she is not, and this method would only continue to increase the number. The reader had been informed by Dr. H. J. Garrigues that, according to the last census, there was one physician for every two hundred and seventy-eight females in this State. Now, take from that number the girls under puberty, the women who had passed the menopause, the unmarried and the widowed, and those who did not bear children, and did it not seem probable that, if each physician was slightly energetic, he could attend to his quota? If it was found that he could not, more could be educated at the medical colleges, which are plentiful in this State. These principal objections showed the fallacy of such a course. In the States of Illinois, West Virginia, Missouri, and Minnesota the midwife was treated in a different manner—very conservative in its motive and effect. She was compelled to pass an examination, how rigid he did not know, but probably insufficient in its scope. If she passed successfully, the law obliged her to register and obtain a license. It did not recognize a diploma issued by a college of midwifery. The chief argument against this plan of procedure was that its efficacy was limited, and that it did not meet the question on a proper plane. The arbitrary conclusion arrived at by a consideration of the midwife's status made the final settlement of this question center in her being abolished. This might be accomplished in two ways: by a lingering conservative policy, which gradually led up to the ultimate act, or by the power of the law. The law of 1880, which annihilated quacks, had never tested the midwife's legality, so far as he knew. Yet, if that law was rigidly enforced, no court of justice could acquit her. Its reading announced her guilt. The means, then, lay in testing this law as it was framed, or in petitioning the Legislature for one which was so perfectly adjusted to her case that she could not escape.

Dr. ROCHESTER said he had seen a great many atrocities committed by midwives. They did not use water, but made the patient wallow in her dirty clothes for a week. They undoubtedly carried diseases from one bedside to another. It was very much worse here than in Europe, where education was required. It was, however, impossible to convince some women that a man was better than a midwife, and there was the additional inducement of cheapness of attendance. He thought the poor should be attended by physicians at a moderate compensation, or some provision made for an obstetrical dispensary service.

Dr. COAKLEY mentioned the abuse of alcohol by midwives. They administered spirits in almost every case, without regard to the condition of the patient. He remembered a woman in a southern city, who had the largest obstetric practice in the place, charging ten dollars a case, and who had attained to considerable skill and dexterity in the treatment of certain puerperal disorders.

Dr. HARTWIG thought it as much a political as a medical question. This was a free country, and, if a patient desired help, let her seek it where she would. They were also discussing the midwife in Germany at this time, although she was there educated to a high degree. She was especially taught to diagnosticate positions, and was required to call the physician when needed. The foreigners here in America knew very well how to distinguish the educated midwife of Germany from the self-made one. The real danger was in her freedom. He mentioned a midwife of Buffalo who had told him she had had one thousand successive successful cases, among which she had turned fifty times in cross presentations, had had fifty footling cases, and one of placenta prævia, had three times called a doctor to apply the forceps, and had fifty times removed the placenta with her hand. No mother or child had died during confinement. He believed she told the truth. There was place for the midwife in this country. She washed the child, prepared food for the mother, and did many things the doctor could not do. Labor was really a physiological process, and a midwife was just the person to oversee it.

Dr. WEIL stated that the physicians already charged sufficiently small fees, the old ones especially, and mentioned instances.

Dr. RING thought every woman entitled to treatment by physicians, because she is a woman and a mother. We owed it to her to abolish the midwives.

Dr. STOCKTON had formerly been of the same opinion as the essayist, but he did not now consider midwives dangerous. He spoke of a midwife who had had one thousand cases without a death, and other physicians had told him of just such cases. The work, in his judgment, belonged to the midwife.

Dr. HOPKINS was amazed to learn that all the physicians of this city together had charge of but one third of the obstetrical cases. He could not believe that the average midwife could have a thousand successive cases without the death of a mother. Certainly, no physician could boast of such results. He thought one evening not sufficient to consider this matter, and the society should take time to study it. We ought to address a memorial to the State Medical Society upon this subject, and learn if in other parts of New York the profession attended at but one third of the births.

Dr. VAN PEYMA thought the paper one-sided, although it showed the necessity for reform. Having much to do with midwives in his practice, he had come to respect them highly, especially those with foreign diplomas. In his own family he would certainly prefer a midwife to a district physician. The statements of midwives were not reliable, as they called doctors in bad cases, and the death certificates were signed by them. The midwife to whom Dr. Hartwig referred was not trustworthy. The one to whom Dr. Pryor called attention in his paper he considered one of the best at East Buffalo.

Dr. CROXY believed midwives to be very useful. He had noticed that they were all widows. Perhaps their own experience had led them to adopt this calling. He mentioned one who had attended five thousand cases in twenty-five years. She was very ignorant. He asked her where she had acquired her art. She answered that she had read six books. Being asked the name of the author, she responded, "My husband." He thought midwives should be admitted to lectures upon this subject at medical colleges. Many of them were cleanly, and many were not. Some were acquainted with antiseptics.

Dr. MANN felt that it would be better to dispense with the midwives and make use of physicians only, but it was not practicable. As we must have them, it was the duty of the profession to try to educate them.

The PRESIDENT recalled several instances of maltreatment of

puerperal women by midwives. The statistics given by Dr. Hartwig's midwife were, in his opinion, utterly unreliable. The midwives used ergot too much and indiscriminately. Many women were afraid of a doctor because of his instruments.

Dr. PRYOR, in closing, stated that in his paper he had spoken only of the average midwife, referring to the one hundred of the city as a class. He thought the gentlemen who had spoken had in mind only the one or two with whom they had severally been brought in contact. He had purposely avoided citing instances, although he had innumerable such to offer, because he wished to treat midwives as a class. If Dr. Van Peyma considered the one midwife he mentioned as one of the best in Buffalo, that was a good criterion from which to judge of the rest.

Dr. HOPKINS, Dr. RING, Dr. HARTWIG, Dr. PRYOR, and Dr. VAN PEYMA were appointed a committee to give the subject further consideration and report at a subsequent meeting.

AMERICAN OPHTHALMOLOGICAL SOCIETY.

Twentieth Annual Session, held at the Grand Hotel, Catskill Mountains, N. Y., Wednesday and Thursday, July 16 and 17, 1884.

Wednesday's Proceedings.—Evening Session.

(Concluded from p. 104.)

Embolism of the Central Artery of the Retina.—

Dr. H. S. SCHELL, of Philadelphia, read a paper in which he related the case of a woman, aged seventy-one years, who while walking saw different colors before the left eye. This was followed by sudden loss of vision. The left pupil was dilated, and there was some drooping of the upper lid. Examination of the heart showed insufficiency of the mitral valve and hypertrophy of the left ventricle. The ophthalmoscope showed swelling of the disc, and edema of the central portion of the retina. There was no red spot at the macula. The veins were smaller than the arteries, which were about of the normal size. In the inferior arterial branch there was an apparently empty space. Pressure on the eyeball emptied the veins completely, but had no effect on the arteries, yet, after massage had been practiced for some minutes, a regular current was induced, but this blood-current was broken into little cylinders. The patient stated that before the attack the left eye had been the better of the two. The right eye presented a somewhat ill-defined and muddy disc, and the visual field was somewhat contracted. Iodide of potassium, in five-grain doses three times a day, with massage, was ordered. Three weeks later the vessels had become thinner, but by massage a current could be induced. At this time chloride of ammonium, in two-grain doses, was substituted for the iodide. Two weeks later the disc had become white, and the arteries thread-like. There was no movement visible. The patient then passed from under observation.

Dr. W. F. NORRIS, of Philadelphia, stated that he had had the opportunity of examining this case with Dr. Schell, and that the interrupted current in the arteries was very distinct.

The Natural History of Cataract.—Dr. ARTHUR MATHEWSON, of Brooklyn, described the case of a naval surgeon who was operated on in 1863 for cataract of the right eye, with success. The left eye was at the same time the seat of a senile cataract. He had in this eye repeated attacks of iritis, which readily yielded to atropine. Two years ago he came to Dr. Mathewson, stating that he could see better with the left eye than he previously could. An examination showed that the cataract had disappeared. The lens was afterward discovered in the anterior portion of the vitreous chamber just below the ciliary region, apparently very small, and it appeared to be fixed there. A few delicate remains of the capsule could be made

out. After correction, $V = \frac{2}{3}$. He used the eye for two years, but then began to suffer from attacks of iritis. At first these yielded to atropine. Last autumn, on one occasion when the eye was giving pain, he found that the atropine did not relieve the pain, and he came to Dr. Mathewson. At that time the eye exhibited the appearance of glaucoma. There was also a flocculent-looking mass in the lower part of the anterior chamber. A two-grain solution of eserine was now employed. This reduced the tension and cleared up the sight. There was no return of the pain for some weeks. Eserine at first gave partial relief when the pain returned, but it soon ceased to have any effect. At one time, when he was suffering very greatly, a hypodermic injection of ten minims of Magendie's solution of morphine was given. This relieved the pains and also the glaucomatous symptoms. The symptoms, however, returned in a few days, and morphine failed to relieve them. Enucleation of the eye was then decided on. When examined after removal, the lens was found to be very much attenuated, hardly 3 mm. in diameter, and very thin. There had been no injury or blow to account for the dislocation of the lens.

Dr. JOHN GREEN reported three cases in which cataract had terminated in a similar manner.

Errors of Refraction.—Dr. W. W. SEELY, of Cincinnati, read a paper giving his experience in certain cases of affection of the refraction. He laid particular stress on lack of balance of the ocular muscles, and its relation to changes of refraction; on the lesser degrees of myopic astigmatism, with or without blepharitis, with or without asthenopic symptoms; and on the state called mixed astigmatism. Very often apparent myopia or myopic astigmatism was not real, and, in order to determine this, the accommodation should be paralyzed. A number of cases illustrating the different refractive errors considered were given in detail.

Clinical History of a Case of Sympathetic Ophthalmia was the title of a paper by Dr. L. WEBSTER FOX, of Philadelphia, which, in the absence of the author, was read by the secretary. W. W. sustained a puncture of the left eye in the ciliary region. The wound was situated in the inner lower quadrant of the ball, near the cornea. The eye was treated with cold water and banded. In twenty-four hours iritis developed. The trouble went on until perception of light only remained. There was but little pain. In two weeks the boy was allowed to go to school, although the eye was still inflamed. Two days later he complained of dimness of vision in the right eye. An ophthalmic surgeon who was then consulted at once began vigorous treatment, but without benefit. When the boy was seen by Dr. Fox the left cornea was hazy, and the pupil occluded. There was still perception of light. The condition of the right eye was similar, but more pronounced. On the thickened iris new-formed vessels could be discerned. There was but little pain, but light could not be borne. As considerable inflammatory deposit remained, mercury was administered. During the next few weeks the redness disappeared, but vision was lost.

Two Cases of Orbital Abscess were reported by Dr. J. A. LIPPINCOTT, of Pittsburgh, Pa., in one of which complete recovery occurred, while the other was remarkable on account of the early age at which the disease developed. The first case was seen in September, 1877. The disease occurred in a feeble child after an attack of facial erysipelas. A small abscess of the right upper lid first formed. There was at this time no displacement of the ball nor loss of mobility, but the general symptoms were more marked than could be accounted for by the abscess of the lid. The small abscess was opened, and a few drops of pus escaped. It then rapidly healed and the patient was placed on the use of syrup of iodide of iron and quinine. Six days later a rapid protrusion of the eyeball took place, accom-

panied with a speedy increase in the general symptoms. The ball protruded more than half an inch, it was scarcely movable, and there was almost complete ptosis. The sight appeared to be unimpaired. An exploratory incision was made under the upper lid, on the inner side of the eyeball, and pus was discovered. The incision was then enlarged and a drachm and a half of thick offensive pus was evacuated. A poultice was applied in such a way as to produce pressure. The swelling and protrusion then rapidly subsided, and five weeks later the mobility of the eye had returned. After forty-eight hours an abscess behind the left ball developed. This was evacuated and rapidly healed. A recent examination of the eye showed scarcely any protrusion, a normal fundus, and perfect vision.

The second case, which was seen in the autumn of 1880, occurred in a child twelve months old. The disease could only be attributed to exposure to cold. Three weeks before the child came under observation the eyelids became greatly swollen. Two weeks later rapid protrusion of the globe occurred, accompanied with a slight muco-purulent discharge. An intra-orbital abscess was diagnosed. At the time of the examination the pain did not seem to be severe. There was a temperature of 99° F. An aspirating-needle was introduced above the globe, and dark-brown fetid pus escaped. An incision was then made and a drachm of pus allowed to escape. A poultice was applied and quinine and iron were administered. The patient gradually improved, but a week later it became necessary to make a second opening, as the first had closed. At this time thick, creamy, laudable pus escaped. Two weeks afterward the opening closed and the condition continued to improve. At present there was about one sixteenth of an inch protrusion, with considerable swelling of the lids and partial ptosis. A gelatinous mass three quarters of an inch long and a quarter of an inch wide protruded between the lower lid and the eyeball. The mobility was perfect. Vision was limited to perception of light. There was decided white atrophy of the disc, and the retinal vessels were much contracted.

Dr. S. THEOBALD said that he had recently had a severe case of abscess of the orbit, in a man run down with hard work. When he first complained of pain about the eyeball there was some chemosis, with perhaps a little prominence of the eyeball. This gradually increased, and in a few days fluctuation could be detected. An incision was made, and free discharge of healthy pus followed. The eye gradually receded. Two days after the first incision it became necessary to make another opening lower down. The exophthalmus entirely disappeared, and vision was completely restored.

Abscess of the Frontal Sinus, Ethmoidal Cells, and Sphenoidal Sinus.—Dr. CHARLES J. KIPP, of Newark, read a paper on the case of a patient who had suffered from headache for a number of years. Diplopia was observed one year before he came under observation. A nodular tumor was found involving the left orbit and pushing the eyeball downward and outward. The tumor was hard, and no fluctuation could be detected. The sight was normal. The fundus presented no special peculiarities. The diagnosis made was sarcoma with periostitis. An operation was decided on. An incision was made over the tumor, which was found to consist in part of bone. During the progress of the operation, the wall of the tumor ruptured and a large amount of fetid pus escaped. The abscess was found to extend upward and backward. The pus was removed and a drainage-tube introduced. The abscess was washed out every day. On the eleventh day after the operation the patient contracted pneumonia, and, despite careful treatment, died on the seventeenth day after the operation. At the post-mortem, the frontal sinus, the sphenoidal sinus, and the ethmoidal cells were found to have been converted into one

large cavity, from the walls of which numerous spicules of bone projected.

Dr. KIPP also described a case of **Distension of the Frontal Sinus**. The patient presented a painful swelling below the left eyebrow. This had begun to appear about six months previously, although there had been pain in this region for several years. The tumor was hard, but, on deep pressure, fluctuation could be detected. Distension of the frontal sinus was the diagnosis, and an operation was recommended. This was declined, and the case was not again seen for eight months. The swelling was then larger, the eye had become red and painful, and an ulcer of the cornea had appeared. Under treatment the inflammatory symptoms subsided. On one occasion, while the swelling was being examined, it was felt to give way, and at once there was a discharge of pus into the nose. After this the nose was frequently washed and nitrate of silver applied to the mucous membrane. The abscess was also emptied of pus every day, by means of pressure with the finger. Under this treatment the sac became distended less and less frequently, until the present time, when it rarely became enlarged.

Dr. L. HOWE, of Buffalo, read a paper on **The Changes which occur in the Eye immediately after Death**.

Thursday's Proceedings.—Morning Session.

Dr. W. S. LITTLE read a paper on **Glioma of the Retina**, double congenital. A child three months old was seen in June, 1882, and a glioma in each eye diagnosed. There was no history of syphilis. At the age of one year the child became blind. The case progressed, and recently the glands of the neck became involved. The parents would not allow any operative interference. The treatment consisted of the administration of iodide of potassium and mercury. The child died in May, 1884.

Dr. THEOBALD related a case of glioma in which he enucleated the eye four years ago. So far, there had been no return of the disease. In another case of glioma he had enucleated the eye, but the child died one year later from some affection of the brain, the exact nature of which he had been unable to ascertain. The first patient was twelve years old and the second nine years.

Dr. W. F. MITTENDORF, of New York, asked whether it was not the general experience that enucleation in glioma was simply palliative and not curative. He thought that it was unusual for the disease to develop so late as in the cases reported by Dr. Theobald.

Dr. STUPHEN, of Newark, stated that in a case which he had examined there were, with the glioma, choreic symptoms, which he thought might be due to the glioma. He enucleated the eyeball and prescribed Fowler's solution. The child recovered.

Dr. MATHEWSON remarked that some of the rare cases of non-recurrence of glioma after operation could be accounted for on the ground of faulty diagnosis, and related a case in support of this statement.

Dr. H. KNAPP, of New York, said that complete recovery undoubtedly might take place after operation in cases of true glioma. He had seen one case, and the patient was still living, fourteen years after the removal of the eye. The anatomical investigation showed beyond doubt that there was glioma.

A paper giving a partial report of the progress of the **Examination of the Employees of the Pennsylvania Railroad as to their Color-sense and Acuteness of Vision and Hearing**, by Dr. WILLIAM THOMPSON, of Philadelphia, was read by Dr. W. S. LITTLE. The paper also referred to the importance of legislative action on the subject, and described what had been done in this direction.

Dr. GEORGE C. HABLEY, of Philadelphia, read a paper describing two cases of **Swelling of the Optic Papilla**, probably congenital. The first was that of a student suffering with myopia, who consulted the doctor to find out whether or not he was wearing the proper glasses. The ophthalmoscope showed swelling of the optic nerve to the extent of 3 or 4 D. The case was examined several times afterward, and no change in the condition was observed. The second case was that of a girl fifteen years of age. She had suffered from headache and pain in the eyeball, increased by the use of the eye. There was slight hypermetropia, which was corrected, and the symptoms disappeared. There was also observed a swelling of the optic papilla, which remained the same as long as the case was under observation.

Dr. SAMUEL D. RISLEY, of Philadelphia, related the case of a young married woman who consulted him for asthenopic symptoms. He found hypermetropic astigmatism and swelling of the nerve to the extent of 2 or 3 D. The margins of the disc were decidedly obscured. The refractive defect having been remedied, the symptoms passed away. After correction, $V = \frac{2}{3}$.

Dr. MITTENDORF had examined a similar case, and had attributed the appearance to an overgrowth of the connective-tissue elements of the optic disc. There was also a fine silky appearance of the retina. This case had been under observation for more than a year.

Improvement of Vision with Rahlmann's Hyperbolic Lenses.—Dr. G. HAY, of Boston, reported two cases. In the first case the cornea was unduly prominent, and in the second there was pronounced conical cornea. In both there was decided improvement of vision.

A Case of Myxedema with Atrophy of the Optic Nerves was reported by Dr. O. F. WADSWORTH, of Boston. The patient was a married woman, forty-two years of age. She had never had any children nor any miscarriages. Menstruation had been regular until three years ago, when it ceased. The general health had been good. Six years ago the face, the lower part of the hands, and the feet became enlarged and oedematous, but did not pit on pressure. This gradually increased, but continued limited to the parts first affected. She stated that she never perspired, but the skin was not especially dry to the feel. A year and a half ago she noticed that the sight of the right eye was beginning to fail. With this eye there was now barely perception of light. With the left, vision was $\frac{2}{3}$. The discs presented the appearances of simple gray atrophy. The mental condition was good, although her friends thought that her memory was not so good as formerly. The reader had examined other cases of myxedema, but had never before seen any affection of the eyes.

Dr. LITTLE had examined seven or eight cases of myxedema, but had never seen anything abnormal with the eyes.

Acute Dacryo-adenitis was the title of a paper by Dr. THOMAS R. POOLEY, of New York. The case occurred in a girl of twenty, who had been suffering from chronic trachoma and trichiasis. Subsequently diphtheritic inflammation of the conjunctiva of the left eye appeared and caused the destruction of that eye. Three weeks later a painful swelling appeared at the outer upper angle of the right eye. Hot applications were employed and quinine and large doses of tincture of the chloride of iron were used internally. The following day an incision was made through the lid, but no pus was found. The applications were continued. The next day there was decided improvement. The hot applications were now used for fifteen minutes three times a day, and in the intervals a pressure bandage was applied. Improvement was rapid, and, when last seen, she was perfectly well and the sight was completely restored.

Dr. KNAPP did not think that unilateral inflammation of the

lachrymal gland was a rare disease. Bilateral inflammation was more rare. He had never seen inflammation of the lachrymal gland appear during the course of an infectious disease, and in the majority of cases which he had seen there had been no affection of the conjunctiva.

Dr. H. G. MILLER, of Providence, had seen one case of bilateral inflammation of the lachrymal glands, which at the time had been supposed by the family physician to be gonorrhoeal ophthalmia. The treatment consisted in the use of hot-water cloths. Under this the inflammation subsided, without suppuration, in the course of three days.

Polycoria.—Dr. MITTENDORF described two cases. One was in a lady of thirty-two. Seven years previously the sight of the right eye had been lost. She consulted the doctor for compound hypermetropic astigmatism. On examination, he found five pupils, the largest one being in the center. After correction, $V = \frac{3}{8}$. The second patient was the father of the first one. He had two pupils, the lower one being divided into two by a band passing across it. In neither of these cases had there been any deterioration of vision.

Dr. SEELY had studied a number of cases occurring in one family. In all the instances which he had seen the patient eventually became blind with choroiditis.

A Plastic Operation for Deformity of the Lids was described by Dr. E. HUTCHINSON. The patient had been injured by a premature explosion while blasting a rock. This had caused destruction of the sight of the left eye. The right eye was uninjured, but the healing of the wound had caused such contraction of the lids and the parts surrounding them that he could not open his eye. In order to relieve the difficulty, a deep incision was made through the external commissure, and the ligament was divided and dissected up. A web of conjunctival tissue was then dissected free and inserted into the opening which had been made. After this had united, the ectropion was operated on by making a V-shaped incision and bringing the parts together. A very satisfactory result had been obtained. Photographs were exhibited showing the condition before and after the operation.

Removal of Foreign Bodies from the Vitreous.—Dr. JOSEPH AUB, of St. Louis, described four cases, including three in which pieces of iron that had passed into the vitreous were successfully removed with the electro-magnet. In these cases sight was preserved. In the fourth case the magnet could not detach the piece of iron. The eye was enucleated, and examination showed the particle to be so firmly imbedded in the walls of the eye that it was impossible to detach it with the forceps until the attachments were cut.

Dr. KNAPP had come to the conclusion, from his own experience and that of others, that the best plan to pursue when the foreign body could not be seen would be to remove the globe.

A Case of Hypermetropic Astigmatism was described by Dr. RISLEY, who had seen it nine years ago. Glasses were ordered, and the symptoms complained of disappeared. Eight years later the patient returned, and an examination showed that there was then myopic astigmatism, which being corrected, the symptoms again passed away.

Dr. KNAPP thought that many of these cases of so-called astigmatism occurring in nervous girls were not real cases of astigmatism, and that under proper hygienic treatment they would get well without glasses. He thought that the majority of patients would not observe a refractive error of $\frac{1}{2}$.

Dr. THEOBALD thought that the proper indication for correcting a small degree of myopia was the occurrence of asthenopic symptoms. If these were absent, and there was no discomfort from the disproportion between the convergence and the accommodation, a slight degree of astigmatism might be neglected.

NEW YORK OBSTETRICAL SOCIETY.

A REGULAR meeting was held March 4, 1884, Dr. CLEMENT CLEVELAND, Vice-President, in the chair.

A Successful Case of Laparo-hysterectomy for Uterine Fibroids.—Dr. P. F. MUNDÉ presented a specimen, with a written report of the case, sent by Dr. ELY VAN DE WARKER, of Syracuse. [See p. 128.] Dr. MUNDÉ remarked that the case was notable in that the patient recovered, and also because of the rapidity with which the operation was done. The question as to the best manner of treating the stump had been raised in this case, as at the last meeting of the society; certainly the extra-peritoneal plan was the one which had been successful in the hands of German surgeons. Recently the elastic ligature, clamped with lead, had been allowed to remain on the stump, to take the place of the clamp, by some operators. In spite of reported successes, one could hardly conceive how inflammation and abscess would not attend the presence of a rubber tube and a bullet in the peritoneal cavity. We had learned, however, that the peritonæum at times would stand almost anything.

Removal of the Ovaries and Fallopian Tubes, followed by the Disappearance of Symptoms of Spinal Atrophy.—Five years ago Dr. MUNDÉ was requested to see a patient by Dr. Allan McLane Hamilton, she being at that time twenty-five years of age. Three years previously, while returning home one evening from a party, during the menstrual period, she was seized with what was called a fainting fit, and was unable to walk. She remained paralyzed in the lower limbs for some months. Gradually some power returned, but she remained unable to walk, being only able to put one foot a little before the other, dragging the left one as a patient affected with hemiplegia would. Dr. MUNDÉ was asked to see the patient because, at her menstrual periods, she suffered a great deal from pain in the left ovarian region and back, and from nausea and vomiting, which continued for two weeks out of every four. She became emaciated in consequence, and had been all these years a bed-ridden invalid. A vaginal examination showed retroversion of the uterus and prolapse of the left ovary. The ovary was not much enlarged, but very tender. Pessaries and other means for maintaining the womb in an improved position gave rise to pain, intra-vaginal and abdominal counter-irritation gave but temporary relief, and finally treatment was abandoned. Oöphorectomy was suggested, and the patient was anxious for it, but it was not countenanced, because Dr. Hamilton had examined the patient very carefully and found undoubted symptoms of chronic myelitis in the lumbar region of the cord. Dr. Thomas and Dr. Emmet had seen the patient before she came under Dr. MUNDÉ's care, and both had also discountenanced an operation, believing that the disease of the cord would in no way be benefited thereby. In this opinion Dr. MUNDÉ entirely concurred. During the next three years Dr. MUNDÉ saw the patient only occasionally, when she suffered more than usual from ovarian pain. Last autumn she again raised the subject of removal of the ovaries, and was more anxious than ever to have the operation performed, especially after she had been shown the report of a recent case (in the "Centralblatt für Gynäkologie") of a woman who had been for seven years in a similar condition, unable to walk and forced to take nourishment through a tube, because of continuous trismus, and who, six months after removal of the ovaries, was able to walk six miles, and made a perfect recovery. After due deliberation, Dr. MUNDÉ finally decided to give the patient the chance of possible benefit from the operation, provided a consultant agreed. Dr. Emmet again saw the patient, and he also thought that, while the operation probably would be of no benefit as regarded the ataxia, and perhaps of none as regarded the general debility and nausea, still,

as there was no other possible chance of relief before the climacteric period, nearly fifteen years hence, she might as well be given this chance, knowing, as she did, the risks. On the 6th of January both ovaries and tubes were removed, the uterus being elevated with a repositoir. No special difficulty was experienced during the operation. The ovaries were not adherent. The highest temperature after the operation was 99.5° F. The patient, who was an unusually intelligent lady, called his attention four days after the operation to the fact that she was able to move the toes of the left foot, which she had not been able to do during the preceding seven years. About a week later she was able to bend the left knee. About the fifteenth or seventeenth day she was moved to a lounge and began gradually to learn to walk, beginning like a child. Instead of dragging the left foot, as she had formerly done, she placed it directly forward in the normal manner. It was now two months lacking two days since the operation was done, and Dr. Mundé had seen the patient this afternoon, when she walked the full length of the double room without assistance, and apparently as well as anybody could. He confessed that he was surprised to see such marked improvement in the spinal symptoms. The gastric symptoms had also greatly improved. There had been no sign whatever, not even a molimen, of menstruation since the operation.

Removal of the Ovaries and Fallopian Tubes.—Dr. MUNDÉ also presented the tubes and ovaries removed a week ago at Mt. Sinai Hospital from a patient, twenty-four years of age, who had been married for three years, and for two years had suffered severely from dysmenorrhœa and from hysteropileptic attacks. Dysmenorrhœa had existed before, but in a less marked degree. The patient was unable to work, and the epileptoid attacks, which occurred at irregular intervals and as often as three or four times a week, left her in a very prostrated condition. She had been unable to obtain any relief, and was therefore very desirous of oöphorectomy. Although she had been sent to him by her physician with the express purpose of having the ovaries removed, Dr. Mundé was skeptical about the propriety of the operation until after he had had her under observation for some weeks in the hospital. While sufficient time had not elapsed to speak of the permanency of the result, it would seem that the patient would be markedly benefited by the operation. There were extensive adhesions, and considerable difficulty was experienced in removing the ovaries, but the patient was making a very good recovery; the highest temperature occurred on the third day, reaching only 100° F.

In reply to a question by Dr. J. G. Perry, Dr. Mundé said the left ovary in the first case contained three small cysts. He further said that there had been no flow, nausea, vomiting, or pain. The appetite had greatly improved. In the second case there was salpingitis.

An Instrument for Perforating Shot.—The VICE-PRESIDENT presented an instrument of this sort, devised by one of the workmen in Messrs. Caswell, Hazard & Co.'s factory.

The Treatment of Certain Cases of Retroversion of the Uterus by causing Post-cervical Adhesion.—Dr. J. B. HUNTER said there were certain cases of retroversion of the uterus, unattended with flexion, in which the malposition seemed to be due to the mere force of gravitation, so easily was the organ replaced. It seemed to him that, if in such cases the cervix could be fixed to the posterior wall of the vagina, the uterus would cease to fall backward. With this idea he had recently denuded a portion of the posterior border of the cervix and of the vaginal vault, and fastened them together with sutures. When union had taken place he would remove the sutures. The suggestion had been derived from seeing a case in which the same object was accomplished by cicatricial bands between the

posterior wall of the vagina and the cervix, following inflammation.

The Effects of a Pretended Oöphorectomy.—The cases related by Dr. Mundé suggested the following one to Dr. W. R. GILLETTE. A German girl entered St. Francis's Hospital with a history that she had been in nearly all the hospitals in the city, for severe dysmenorrhœa, pelvic pains, and epileptic seizures. She professed to live without eating, but it was found that she took bread in some surreptitious manner. The Sisters watched her very closely, and concluded that she was a hysteropileptic. Dr. Gillette found prolapse of the ovaries. The patient was very anxious to have an operation done, and her mother stated that doubtless she had been a real sufferer for several years. Dr. Gillette thought it a good case in which to try the influence of mind over matter, and made all the necessary preparations for oöphorectomy, placed the patient upon the operating-table, made an incision into the subcutaneous fat of the abdominal walls, and closed the wound. The patient improved wonderfully after the pretended oöphorectomy. He had heard, however, that she had lately had a return of the symptoms, and had presented herself at several hospitals, desiring that something more than the ovaries be removed.

Dr. MUNDÉ said that he had reported a case to the society a year ago, in which the operation was unsuccessful as regarded relief from the symptoms. The patient had since committed suicide.

Dr. W. G. WYLLIE (present by invitation) mentioned the fact that he once removed both ovaries and tubes, and the patient had menstruated regularly ever since.

Dr. W. M. CHAMBERLAIN said the case reported by Dr. Gillette was not altogether unique. He had been told by a friend that a gentleman in Brooklyn had cut into the abdominal wall nearly down to the peritonæum in a certain case, and then sewed up the wound, and that for six weeks afterward the patient was entirely relieved of dysmenorrhœa and other symptoms. He had not heard from the case since.

PATHOLOGICAL SOCIETY OF PHILADELPHIA.

Meeting of June 26, 1884.

The President, Dr. TYSON, in the chair.

Specimens from a Case of Resection of the Humerus.

Dr. C. B. NANCREDE related the case of a girl, seventeen years old, from whom the specimens had been removed. On the 2d of January she received a severe compound comminuted fracture of the left humerus by having her arm wound around the main shaft of a piece of machinery in a spinning-mill. At the same time she received several severe scalp wounds. Irrigation with bichloride-of-mercury solution resulted in saving the arm, although the girl nearly lost her life. At the end of six weeks, no union having taken place, and the ends of the fragments having become necrosed, the speaker cut down upon and removed the fragments shown, and, after sawing off the ends of the main fragments, drilled and fastened the latter together with two stout silver wires. The whole limb was then put up in a plaster apparatus, which was not disturbed until irritation of the skin from pressure, etc., required it. Now, at the expiration of five months, the fragments seemed firmly consolidated, and the line of the bone was apparently perfect.

Spindle-celled Sarcoma of the Breast.—Dr. G. SCHWEINITZ presented microscopic sections from a tumor of the breast that had been removed at the University Hospital by Dr. John Ashhurst. The history, in brief, was as follows: Annie S., married, aged thirty-five, the mother of four children, had a good family history. Her own health was good until two years

ago, when she began to suffer from the effects of malaria. The tumor of the breast was first discovered one year ago, and grew gradually, without much pain, until the date of the operation, when it had attained the size of an orange. There was no enlargement of the axillary glands, and the nipple was not retracted. To the touch, the growth was hard, and in spots the skin had become adherent, giving rise to the pitted, somewhat brawny or lardaceous appearance described by surgical writers as rather indicative of scirrhus of the breast. This appearance was sufficiently marked to cause the diagnosis of hard carcinoma to be suggested as probably correct. When the mass was laid open, after its removal, both cut surfaces did not appear concave, as was usually the case with a scirrhus, and microscopic examination had cleared up the diagnosis, for, as would be seen by examining the specimens, they showed the typical appearances of a small-spindle-celled sarcoma. The case seemed a good one to illustrate the difficulties sometimes encountered in correctly diagnosing tumors of the breast, and for the reasons that had been briefly referred to.

Reports on the Progress of Medicine.

OPHTHALMOLOGY.

By CHARLES STEDMAN BULL, M. D.,

LECTURER ON OPHTHALMOLOGY AND OTOTOLOGY IN THE BELLEVUE HOSPITAL MEDICAL COLLEGE; SURGEON TO THE NEW YORK EYE AND EAR INFIRMARY; OPHTHALMIC SURGEON TO ST. MARY'S FREE HOSPITAL FOR CHILDREN AND TO THE NURSERY AND CHILD'S HOSPITAL.

Color-Perception and Color-Blindness.—Burnett ("Arch. f. Augenheh.," xii, 2, 3), in his paper upon this subject, reviews the objections of Mauthner to the Young-Helmholtz theory of three colors, and also the results of Pfäfer's investigations. He then considers Donders's objections to Hering's theory of color, especially the objection that this theory does not explain the various forms of color-blindness. The investigation of a very large number of cases of color-blindness has led to the conviction that there are no cases of pure red, green, or violet blindness; and hence it is better to use the terms red-green and blue-yellow blindness. Neither of the two hypotheses, the Young-Helmholtz nor the Hering hypothesis, can be regarded as an acceptable or admissible theory, as neither of them is capable of explaining all the phenomena. In congenital color-blindness too much importance is attributed to the retinal elements as color-perceiving organs, without considering other factors. The perception of color is carried out by three organs: the retina, the optic nerve, and the brain as visual center. If one of these parts does not function, disturbances appear. The real theory of colors, when found, will be a simple one, which will agree with the well-known laws of the action of light upon simple bodies. From experiments upon the molecular action of light upon certain substances, it is probable that the difference in color-perception depends not upon the composition of the tissue, but upon the difference in action of the acting cause.

Cysticercus Ocularis.—Manz (*Ibid.*) reports two interesting cases of this somewhat rare disease. The first case was a subconjunctival cysticercus occurring in a man, aged sixty-five, who presented a tumor as large as a bean over the insertion of the internal rectus of the right eye. The overlying conjunctiva was somewhat injected, but freely movable over the tumor. The latter was elastic, and evidently a cyst. The conjunctiva was divided over the growth, which presented itself as a translucent cyst, which, on being grasped at the base, collapsed, and

the cysticercus, with the head and neck drawn into the bladder, was readily removed. The second case was a subretinal cysticercus, occurring in a young woman, who complained of a sudden loss of vision in the right eye some weeks before. Two weeks later there was a moderate inflammatory process, with pain in the eye; this lasted for several weeks, and then slowly subsided, and the vision improved somewhat. Vision was normal in the good eye and only $\frac{1}{10}$ in the affected eye, by extreme eccentric position of the eye. In the vitreous there was a delicate net-like opacity, which obscured the entire fundus. The outline of the disc was indistinct, its central part injected, and the retinal veins dilated. In the region of the macula lutea there was a sharply defined detachment of the retina of a grayish-white color and about four papillary diameters, the apex of which was slightly outside of the posterior pole, and the horizontal axis of which was just above the horizontal meridian. At the lower margin of the detachment was a small pouch or ectasia, and at its apex there was a sharply defined yellow spot, across which ran a small vessel. The surface was smooth in places, and in places wrinkled in small folds. The region between it and the papilla was cloudy, and the retina seemed elevated in irregular folds; in the middle of this region were two small red points. The visual field, repeatedly examined, showed normal external limits and a large, irregular scotoma downward and inward from the point of fixation, within the limits of which vision was entirely abolished. A diagnosis was made of cysticercus subretinalis, and it was decided to attempt its removal by operation. The conjunctiva was divided on the temporal side, three millimetres from the corneal margin. A thread was then passed through the tendon of the external rectus muscle, and the tendon was then divided. The eyeball was then pulled over as far toward the nose as possible, and an incision was then made in the sclera just above the horizontal meridian. As soon as the choroid was divided, a cloudy fluid escaped from beneath the detached retina. A curved pair of forceps was then introduced and directed backward, and the small bladder-bag was easily removed. There was no loss of vitreous and no hæmorrhage. The wound in the sclera was coated completely, the tendon of the muscle stitched to the sclera, and the conjunctival wound closed by two sutures. The wound healed rapidly and the sutures were removed on the third day. Vision remained about $\frac{3}{5}$.

Reflex Amblyopia and Thrombosis of the Retinal Artery.—Priestley Smith's article ("Ophthalmic Review," Jan and Feb., 1884) is of great interest, and is based mainly upon his observation of the case of a young married woman, aged twenty-four, who consulted him on August 17, 1883, on account of blindness of her left eye. In this case the pathological sequence was probably reflex disturbance of the circulation in the brain and retina through cardiac inhibition; great reduction and slowing of the blood-current in the retinal artery; thrombosis; the event being strongly favored by constitutional anæmia and feebleness of heart. The other eye ran great danger of a similar disaster; it was many times temporarily blinded by the same reflex mechanism, and presented for some weeks a marked contraction of the visual field. It was finally restored to a healthy state by the removal, by abdominal section, of both ovaries and Fallopian tubes. When the writer first saw the patient he found in the R. E. Hm. $\frac{1}{4}$ and V. = $\frac{1}{2}$; accommodative asthenopia; pupil, media, and fundus normal, and field of vision entire. In the L. E., V. nearly 0; faint perception of light in a small central area; pupil of same size as its fellow and irresponsive to direct light; media clear; disc white and well-defined; no change at yellow spot; retinal arteries shrunken to threads and for the most part empty; retinal veins a little larger than the arteries. After thorough examination of the pelvic organs by

an expert, a diagnosis was made of chronic ovaritis, with dilatation of the Fallopian tube on the left side. On November 21, 1883, abdominal section, removal of both ovaries and Fallopian tubes. Left ovary matted to left side of pelvis; the corresponding tube convoluted and distended with clear fluid; right ovary and tube intimately adherent, so that their normal relations were destroyed. Complete recovery. On December 23, 1883, examination of R. E. showed asthenopia much diminished and general condition much improved; L. E. probably somewhat improved, as she occasionally sees double. In this case the loss of sight depended more or less completely upon reflex influence. The attacks of transient blindness which the R. E. suffered may have been the expression of heart-failure merely, or they may have been due to spasm of blood-vessels, but in either case they were directly induced by reflex mechanism set in motion from the pelvis. Heart-failure was probably the chief factor, for in most of the attacks the loss of sight was accompanied by actual fainting. The condition of the L. E. showed that its blindness was caused by retinal anemia, and, inasmuch as the exciting cause and mode of onset were the same in both eyes, it can hardly be doubted that the frequent transient blindness of the right eye was also a retinal condition. The ophthalmoscopic appearances in the blind eye, two months after the sight was lost, were precisely like those which follow embolism of the retinal artery. The theory of spontaneous thrombosis is favored by the following points: 1. Previous attacks of transient blindness in the blind eye. 2. A simultaneous attack of transient blindness in the blind eye. 3. Previous or subsequent attacks of transient blindness in the fellow-eye. 4. Signs of disturbance of the cerebral circulation at the onset of the blindness, giddiness, faintness, headache. Evidence strongly in favor of embolism is probably chiefly of a negative kind: 1. Absence of transient attacks of blindness either in the blind or in the fellow-eye. 2. Absence of giddiness, faintness, or pain at the moment of onset. A second case was in the person of a married woman, aged forty, who, during the past three or four years, had had many attacks of dimness of sight. One eye suffered an attack of sudden, complete, and permanent blindness, and, when examined on the fourth day of the blindness, the eye presented the appearances which denote blocking of the retinal artery, and which are commonly attributed to embolism. The patient had valvular disease of the heart. But the idea of embolism in this case was opposed and the diagnosis of thrombosis rendered highly probable by the fact that the attack of permanent blindness had been preceded by a long series of attacks of transient blindness. In a third case, occurring in a man, aged thirty-eight, the patient was not seen until three years after the loss of sight occurred, but the ophthalmoscopic appearances allowed of no doubt that the retinal circulation had been arrested. Here there had been no failure of vision previous to the blinding attack, and the seeing eye suffered no attacks afterward. A diagnosis of embolism would meet the case completely were it not confronted by one small point in the history, namely, that for a few minutes at the onset of the blindness both eyes were blind. There was no disease of the heart in this case, and no evidence of any habitual tendency to vascular disturbance in the brain or retina. Yet the loss of sight was manifestly due to temporary arrest of the retinal circulation, for in the one eye the arteries remained permanently empty. It is noteworthy that the blindness occurred in connection with sleep after a heavy meal. It seems likely that in this case the retinal anemia was a reflex effect proceeding from the stomach. A fourth case occurred in an unmarried woman, aged twenty-five, in whom there had been many transient failures of vision. During the blinding attack both retinæ were completely involved, but the blindness proved permanent only in the lower half of one;

and there was probably some slight peculiarity in the caliber, mode of division, or bending of the lower branch of the retinal artery, which was especially unfavorable to the speedy re-establishment of the blood-stream. The fifth case occurred in a young woman, aged eighteen, who had had a number of attacks of dimness of vision of the right eye, during which the lower half of objects was lost. The attacks always came suddenly and always in one eye. The ophthalmoscopic appearances were normal, with the exception that the vein in the upper half of the right retina was rather engorged. The explanation of this transient hemiopia is probably to be found in some transient cause of diminished blood-flow, more pronounced in the upper half of one retina than elsewhere, owing to some peculiarity in the upper branch of the retinal artery favorable to a reduction of the blood-supply. The sixth case was in a woman, aged twenty, under the care of Mr. Streetfield. Here there was permanent blindness of the upper half of one retina, which depended upon the obliteration of the upper division of the retinal artery. In this case the probability leaned rather toward embolism than thrombosis, as simultaneous failure of both eyes at the onset was wanting. In favor of thrombosis was the fact that there had been transient failures of vision before. There was organic disease of the heart. The seventh case occurred in a woman, aged seventy, who complained of blindness in her left eye. Here there was arterial degeneration, but no valvular disease of the heart. The fact that the blindness yielded twice to rubbing of the affected eye, but returned a third time on the following day, is opposed to the idea that the artery was obstructed by an embolus brought to it from a distance. The author's conclusions from his own observations are as follows:

1. Blocking of the retinal artery is due, in a considerable proportion of cases, to spontaneous thrombosis.
2. The causes of this accident are heart-failure, either from disease of the heart itself or from other causes; spasm of the blood-vessels; disease of the walls of the vessels; alterations in the quality and amount of the blood.
3. Thrombosis may be distinguished from embolism by a history of transient failures of sight resembling the permanent attack in mode of onset, and especially of simultaneous failure of the fellow-eye at the moment of onset; also by a history of faintness, giddiness, pain in the head, or other sign of circulatory disturbance at the moment of onset.
4. A distinction between the two causes is important in relation to prevention and immediate treatment of the attacks.
5. The contraction of the visual field met with in neurasthenic asthenopia is the expression of an impaired nutrition of the retina, not of a central disturbance.

Ophthalmia in the Course of Acute Articular Rheumatism.—Terrier ("Archives d'ophtalmologie," Jan.-Feb., 1884), from his observations on this subject, draws the following conclusions: 1. Primary acute articular rheumatism may be accompanied by ocular lesions, by rheumatic ophthalmia, though such cases are rare. 2. These lesions are sometimes in the conjunctiva, sometimes in the cornea, and sometimes in the uveal tract. In some cases these different structures are attacked successively in the same case. 3. These ocular symptoms or lesions may coincide with or alternate with inflammatory exacerbations in the joints. 4. In the published observations, the ophthalmia was sometimes acute, but the prognosis is in general favorable. 5. The treatment is that of general acute rheumatism.

Congenital Hemeralopia.—Chibret (*Ibid.*) reports an extraordinary case of this nature occurring in a young man, aged sixteen, in whom he found $M \frac{1}{2}$, $V = \frac{2}{3}$, and congenital hemeralopia. The visual field was very slightly narrowed, and the color-perception was perfectly normal. The fundus showed a moderate posterior sclero-choroiditis in both eyes. No other member of the family was affected in the same way.

A Perimeter of Precision.—Maklakoff (*Ibid.*) gives a detailed description of a perimeter devised by himself, for which he claims great advantages. Instead of Landolt's graduated semicircle, there are two semicircles of the same dimensions which decussate at an angle of 90°, having a common center in the same point as in Landolt's instrument. The free extremities of these semicircles are united by a frame-work resembling the skeleton of a hemisphere, represented by the equator and by two meridians which cross at right angles. The semicircles are but one centimetre in width and are turned toward the spectator, not by their surfaces but by their edges, so that they appear to the observer like a line. The degrees are marked on their surfaces, and the whole is dull black. The point of fixation is in the center. In order to control the direction of the eyes of the patient, the instrument is provided with a movable rod which carries at one end a small fork, and is fastened to the floor of the instrument, so that, when erect, the fork occupies the center of the sphere. The entire skeleton may be moved in the same way as the graduated semicircle of Landolt's perimeter is. Thus the limits of the visual field may be determined in four directions at the same time.

Embolism of the Retinal Artery.—Hirschberg ("Centralbl. f. prakt. Augenheilk.," Jan., 1884) reports a case in detail, and gives some critical remarks upon the differential diagnosis. The patient was a man, aged forty-five, who had, six months before Hirschberg saw him, suffered from violent pain in the head, which passed off after a few weeks. On the morning of the day of his first visit to Hirschberg the vision of the right eye became dim, and in about an hour and a half he became entirely blind in this eye. Four weeks previously he had had a similar attack, which did not lead to absolute blindness. He is short of breath and complains of cardiac palpitations. The left eye was normal, with the exception of a slight degree of hypermetropic astigmatism. The right eye was absolutely blind, and showed the signs of embolism of the central retinal artery, with retinal oedema and narrow arteries. There was no visible blood-current in the retina. The urine was normal. There was a systolic murmur at the apex. The retinal oedema increased, and on the next day there was a small red spot at the macula. The papilla was opaque, pale red, and indistinct in outline. The arteries were small and the veins enlarged with interruptions in the blood-column. From day to day the retinal oedema increased, being most marked between the yellow spot and the disc, giving the impression of a grayish-green or grayish-blue color. On the fifth day a slight current in the arteries was noticeable. From this time on there was a gradual improvement in the fundus of the eye, though the vision remained completely abolished. In October of the same year the patient entered the general hospital, complaining of pain in the head, elbow, ankles, and chest. There were a systolic and a diastolic murmur over the sternum. In the right eye the optic nerve was white, the arteries were very small, and the macula surrounded by a white spot. On January 23, 1883, there was a sudden febrile attack, followed by a bloody, purulent expectoration. The urine contained albumin, red-blood corpuscles, and granular casts. On February 14, 1883, there was another febrile attack, shortly followed by collapse and death. At the autopsy both ventricles of the heart were found hypertrophied, and the cardiac muscular tissue showed extensive fatty degeneration. The aortic valves were enormously thickened and very much shortened. In both lungs there was moderate alveolar distension. The spleen was three times the normal size. The kidneys showed numerous large superficial hæmorrhages, ecchymoses in the cortical substance. The liver was extensively adherent to the diaphragm. The optic papilla showed a deep atrophic excavation, reaching to the lamina cribrosa. In the retina there was

entire absence of the nerve-fiber layer and ganglion-cell layer; enormous oedema of the inter-granular layer, but no change in the bacillar layer. The orbital portion of the optic nerve was practically normal, though the nuclei of the perineurium were increased in number. The inter-vaginal space was free. The central artery and vein of the retina, so far as they ran in the nerve-trunk, appeared entirely unchanged. As regards diagnosis, two theories are to be considered: 1. The four main branches of the central retinal artery were suddenly and simultaneously blocked by an embolus. This assumption is forced, and is set aside by a microscopical examination of the retina. 2. There was an embolus of the central artery close to the point of its origin from the ophthalmic, outside the sheath of the optic nerve, in a place which remained in the cadaver and was not examined. Is this possible without causing changes in the internal coat of the arteria centralis within the optic nerve, a few millimetres from the position of the embolus?

Miscellany.

THERAPEUTICAL NOTES.

The Comparative Action of Coca and Caffeine.—In view of the remarkable discrepancy between the published statements of various observers as to the action of coca, a writer in a recent number of the "Ephemeris of Materia Medica," etc., has entered upon a course of experiments with several drugs reputed to have very much the same physiological action, and all characterized by the property of preventing sleep under certain circumstances. It is generally admitted, and is probably true, the writer remarks, that the same power in these agents which refreshes, recuperates, and sustains, in the condition which needs or requires such effects, also counteracts the tendency to sleep, or produces wakefulness when a tendency to sleep exists, and, therefore, if a tendency or disposition to sleep could be prevented by these agents, this tendency might be used as a measure of their effects when used in varying quantities, and thus the agents be measured against each other for dose, or quantitative effect. The proposition was to first measure coca against tea, then coffee against guarana, and finally to compare the four agents, using pure caffeine as a kind of standard to measure by.

An opportunity for such trials occurred in a healthy individual sixty-five years old, not habituated to the use of either tea, coffee, tobacco, or any other narcotic substances, of good physical condition and regular habits, and not very susceptible or sensitive to the action of nervines or so-called anti-spasmodics. Quantities of preparations of valerian, asafetida, compound spirit of ether, etc., which would yield a prompt effect upon many individuals seemed to have little or no effect upon him, nor did moderate quantities of wine or spirits stimulate him. In short, he had not a very impressible nervous organization, was not imaginative, nor very liable to accept results on insufficient or partial evidence. Fully occupied with work, both physical and mental in due proportion, for more than ten hours every secular day, when evening came he found himself unable to read long, on account of a drowsiness supposed to be of a purely physiological character. With a full breakfast at about 7.30, a full dinner at about 2.30, and a light evening meal about 7, and no stimulants or tea or coffee at any time, he found, as a matter of not invariable but general habit, that by half-past eight drowsiness became so dominant that it was almost impossible, and generally impracticable, to avoid falling asleep in his chair while attempting to read, even though ordinary conversation was carried on around him.

The first trial to combat or prevent this drowsiness was made with caffeine. The first specimen used was a very beautiful article made by Merck, of Darmstadt, and after that pure specimens made for the purpose, the two kinds being found identical in effect.

Beginning with a one-grain dose at about 6.30 P. M., on alternate evenings, leaving the intermediate evenings in order to be sure that the

nightly tendency still persisted, and increasing by half a grain each alternate evening, no very definite effect was perceived until the dose reached $2\frac{1}{2}$ grains, and this dose simply rendered the tendency to sleep resistible by effort. After an interval of three evenings, with the tendency to sleep recurring with somewhat varying force each evening, a dose of 3 grains was taken—the maximum single dose of the German Pharmacopœia. This gave a comfortable evening of rest, without sleep or any very strong tendency to it until ten o'clock. Without anything to counteract sleep, the rule was to read with difficulty by nine, without much comprehension by a quarter past nine, and either be asleep or go to bed by half-past nine. The 3-grain dose of caffeine repeatedly obviated all this discomfort up to ten o'clock, but did not prevent the habitual prompt and sound sleep from the time of going to bed till morning.

This was the model established, upon and by which to measure all the other agents, and they were never taken nearer than on alternate evenings, with occasional longer intervals, especially when the final doses of record were to be taken.

The next agent tried in precisely this same way was coca, and, as it was known that the quality of that which was attainable was very low, the commencing dose of the leaf in substance was 2 drachms, or about 8 grammes. This gave no very definite effect, but $2\frac{1}{2}$ drachms did give a definite effect, and a subsequent dose of $2\frac{1}{2}$ fluidrachms of a well-made fluid extract of coca gave about the same effect as $2\frac{1}{2}$ grains of caffeine. Three fluidrachms of the fluid extract were about equivalent to 3 grains of caffeine.

The writer's investigation of coca is not yet finished, but he has abandoned it for the present.

The Action of Adonis Vernalis on the Circulation was the subject of an elaborate paper, by Dr. Altmann, read at a recent meeting of the Berlin Verein für innere Medizin ("Deutsche Medicinal-Zeitung," July 10, 1884), which concludes as follows: The *Adonis vernalis* is a heart-regulating medicine in the same sense that digitalis is; it increases the power of the heart, retards its action, and heightens the arterial pressure; it quickly gives rise to increased diuresis; the indication for it is the same as for digitalis; it operates more rapidly than digitalis, and has no cumulative action; it often works where digitalis is ineffectual.

A Palatable Solution of Benzoic Acid is proposed by M. Pierre Vigier, in a recent number of the "Gazette hebdomadaire de médecine et de chirurgie":

Benzoic acid.....	1 or 2 parts;
Distilled cannella water.....	50 "
Syrup of tolu.....	100 "
Distilled water.....	850 "

Dissolve the acid in the water, and mix. A tumblerful to be taken during the twenty-four hours. For the benefit of those who dislike a sweet taste, the writer quotes another formula, by M. Laboulbène, which is essentially the same, except that the syrup of tolu is replaced by brandy.

The Treatment of the Premonitory Diarrhea of Cholera is the subject of a communication in the same journal, by M. Lereboullet. He lays stress upon the importance of promptly treating any digestive derangement, and especially any diarrhea, when cholera is prevailing, and advises the use of from twenty-five to thirty drops of paregoric after each stool, with or without ten or fifteen drops of the following mixture:

Ethereal tincture of valerian.....	10 grammes;
Sydenham's laudanum,	
95-per-cent. alcohol, each.....	5 "
Essence of peppermint.....	15 drops.

A Laxative Decoction.—The following decoction is highly recommended by a writer in a recent number of the "Memorabilien": A tablespoonful of a mixture of equal parts, by weight, of senna leaves, frangula bark, and licorice root is to be boiled for ten minutes in a pint of water. One half is to be drunk in the morning, and the other half at night. The latter portion may be allowed to stand without straining, and, should the morning portion have acted sufficiently, may be kept for the next morning. This decoction is particularly recommended as a "spring physic" (*Frühjahrskur*), as it can be taken daily for weeks

together, is not open to the objection of distending the intestine with gases and disturbing the digestion, like mineral waters, and is so agreeable to the taste that ladies take it willingly.

The Berlin Poliklinik.—The "Glasgow Medical Journal" learns that the clinical courses, comprising all the different special branches, for practical physicians, are held every month in the Poliklinik at Berlin, Carlstrasse 30. The courses always commence on the first weekday of the month. They last a whole month and are held every working-day. The number of participants is limited to six for every course. Should more than six apply for the same course, an extra or parallel course will be formed. To all those physicians who wish to perfect themselves in a special branch the opportunity is given to serve three months as assistants in that particular branch. Those gentlemen who have served as assistants will be allowed, in appropriate cases, to conduct the extra or parallel courses. It is intended to constitute the Berlin Poliklinik an international medical school for the improvement of physicians of every country. In order to have the courses conducted in foreign languages, assistantships will be conferred on foreign physicians.

The Late Dr. William Fruitnight.—The following sketch of Dr. Fruitnight has been prepared by one of his fellow-members of the Northwestern Medical and Surgical Society:

Dr. Fruitnight was born of German parents, April 20, 1858, in New York city. His education was obtained in the public schools of the city, where he passed the various grades, graduating from the grammar department. He entered the College of the City of New York, where he was graduated A. B. in the class of 1878, after which he entered upon the study of medicine with his brother, Dr. J. Henry Fruitnight, and Dr. C. A. Leale, and subsequently with Dr. J. E. Winters, and at the Bellevue Hospital Medical College, where he received his medical degree in 1880. Subsequently he successfully passed a competitive examination for an appointment on the house staff of Bellevue Hospital, where he served out his full term.

While in that service he never wavered in the fulfillment of any professional duty which he was called upon to face, and yet his convictions were always superior to formally expressed rules of action, wherefore he was very often guided by the dictates of his conscience, even though they might conflict with such prescribed regulations. When he had charge of the erysipelas pavilion he greatly overtaxed himself, and, like many of his predecessors, became a victim to septic infection, which most probably led to the ultimate cause of his early death. After leaving the hospital he became associated in practice with his brother, and was rapidly obtaining an extended practice, particularly in obstetrics and gynecology.

For a short time he was associated with Professor W. G. Wylie in the New York Polyclinic, in the department of diseases of women. He was also for a short time associated with Professor Louis Elsborg, in the department of laryngology, at the same institution. He was (also for a short time) connected with St. Elizabeth's Hospital.

He was a member of the council of the Bellevue Hospital Medical College Alumni Association, and a member of the Northwestern Medical and Surgical Society, in meetings of which he always took an active part, participating in all the scientific discussions. He was also a member of Empire City Council of the Royal Arcanum, No. 557, of which council he was the medical examiner. While he was studying medicine he taught in several of the evening schools of the city.

His death was very sudden, occurring about 11 A. M. on Sunday, July 20, 1884, at his late residence. He had fulfilled numerous professional duties on the day before. On the preceding evening he had a very difficult and complicated case of instrumental labor, which caused him much anxiety and great expenditure of physical strength. The cause of his death was cerebral thrombosis, the sequel of pachymeningitis. His obsequies were held at the residence of his brother on Tuesday evening, July 22d, the Rev. Dr. J. D. Wilson officiating. His remains were interred at Woodlawn Cemetery on the following day in the presence of his family and a circle of friends, together with delegations from the Northwestern Medical and Surgical Society and Empire Council of the Royal Arcanum.

Original Communications.

A CRITICISM OF

DR. FORMAD'S PRINTED STATEMENTS
AND CONCLUSIONS CONCERNING THE
ÆTIOLOGY OF TUBERCULOSIS.

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THE "New York Medical Journal," in its issue of June 14th of this year (p. 675), contains a report, substantially correct, of the remarks of Dr. Shakespeare during the discussion before the Philadelphia County Medical Society of Dr. Formad's second paper on "The Ætiology of Tuberculosis." In that discussion the remarks of Dr. Shakespeare were limited to three points: the statements made by Dr. Formad of Koch's animus and present views, and a consideration of Dr. Formad's theory concerning the condition of the lymph-spaces in the scrofulous.

In the issue of the same journal of June 28th appears (p. 723) a quite characteristic letter from Dr. Formad, written from the Pathological Laboratory of the University of Pennsylvania. In that letter are certain disclaimers and denials of responsibility for misrepresentations of Koch's present views and animus, with which he was charged during the above-mentioned discussion before the Philadelphia Medical Society.

It is to be remarked that it is a little odd that these disclaimers and denials have been addressed to the readers of the "Journal" rather than to the members of the society before whom his address was delivered. Perhaps, however, those who heard Dr. Formad as he delivered his address, seeing him refer only occasionally to the notes at his side, and also heard at the close of the debate a most positive reiteration of the statements which had been criticised by Dr. Shakespeare, can readily appreciate the reasons which may have caused the author of the letter to address a denial to the readers of the "Journal" rather than to themselves. If, after mature reflection, aided no doubt by the recent appearance of the second volume of the "Mittheilungen aus dem kaiserlichen Gesundheitsamte," in which Koch has declared his present views concerning the tubercle bacillus, Dr. Formad has found it necessary to retract what he said before his audience in Philadelphia in misrepresentation of those views, it would have been manly, honorable, and praiseworthy for him to do so in a straightforward manner. But he has preferred to deny his words, and to address this denial to those who did not hear them. Probably those few of the readers of the "Journal" who did hear the author's words, and have also read the printed article, will not only be struck with the vast difference between some of the oral and the printed statements, but also will be surprised at the declaration that the quotation given in his letter contains *all* that he has ever spoken or published upon that point. The remarks which Dr. Shakespeare

made before the Philadelphia society during the debate were in criticism of statements *orally addressed to the ears* of that body, and not in criticism of what had been for the most part rewritten and prepared for publication many weeks after the address was delivered. But, unfortunately for the author of the letter, there is sufficient basis, even in the greatly modified and tempered language which he quotes as his own, upon which to ground a charge of misrepresentation.

The charge which the author of the letter denies and to which, in his own language, he pleads "*not guilty*," is substantially reported by the recorder as follows:

"2. The author had further announced that Koch had so far modified his views that he now admitted that neither the form, size, and aspect of the tubercle bacillus, nor its want of individual motion, nor its peculiar behavior toward staining-fluids, distinguished it from many other bacilli." ("New York Medical Journal," June 14, 1884, p. 675.)

The language quoted by our author as his genuine and only utterance, and which he thinks to justify his denial, comprises the following sentences: "Koch seems now to lay more stress upon this low-power appearance (the S shape of the culture colonies), and upon the pathogenic properties of the bacillus tuberculosis, as a distinguishing feature from other bacilli, than upon the color test. During the conversation he admitted that some other bacilli may also yield the same micro-chemical reaction as the tubercle bacilli, but insisted that the latter can not be stained brown."

It may not be necessary to reproduce here the actual words in which Koch has expressed his present views, since they have probably by this time been read by every one interested in them. It may, however, be profitable, for more purposes than the present, to render the following into English, as an offset to the representations of the author of the letter:

Speaking of the peculiar action of Ehrlich's special staining method upon the tubercle bacilli and their surroundings, Koch says: "But in the differentiation of the tubercle bacillus this peculiarity (staining the tubercle bacilli a color in contrast to that of their surroundings) renders still further assistance, for not alone do the connective-tissue constituents assume the contrast color, but all other bacteria at present known to me, except the lepra bacillus, later to be mentioned, likewise stain by Ehrlich's coloring method in contrast to the tubercle bacilli. . . . Recently I have tested Ehrlich's method of staining upon numerous substances containing bacteria, such as putrid meat-infusion, decomposing urine, blood, and milk, foul vegetable infusions, swamp-slime, etc., but have never found bacteria which gave the same color-reaction as the tubercle bacilli. I must therefore regard all assertions concerning the occurrence of bacteria which may have been found in sputum, in putrid fluids, intestinal contents of healthy men, swamp-slime, and stained like the tubercle bacilli, as erroneous and dependent upon a faulty application of the method of staining." ("Mittheilungen aus dem kaiserlichen Gesundheitsamte," zweiter Band, Berlin, 1883, p. 12.)

"Besides the tubercle bacilli, there is at present only one

single species of bacterium known which colors in a manner similar to the tubercle bacilli. This is, as I mentioned in my first communication, the lepra bacillus. This fact is the more noteworthy since not only are the parasites of tuberculosis and lepra in manifold respects similar and apparently nearly related, but it is also known that both diseases, even anatomically as well as ætiologically, stand very close together. Of course, the staining qualities of both are not perfectly identical. For, while the lepra bacilli can be colored by the same staining fluid as can the tubercle bacilli, yet the reverse is not the case. The former, as is known, imbibe Weigert's nucleus-coloring material, as Neisser first pointed out, while the latter do not. Notwithstanding the great similarity of these two species of bacilli, still one is able to differentially diagnose each of these two forms of bacilli by means of their different behavior toward Weigert's nucleus-coloring fluid." (*L. c.*, p. 13.)

It is by no means our intention to enter upon an exhaustive criticism of those papers. Neither does time or inclination serve for such a task, for, judging from the abundance of material presented, it might prove almost interminable. Yet the position which their author occupies in this country as the demonstrator of pathology and lecturer on experimental pathology in one of the greatest of our medical schools would seem to entitle him to speak with authority upon the subject of which he writes, and would also seem to enable him to exert no little influence in the development of public opinion concerning those matters. Moreover, he claims to be a leader among the few who, from the standpoint of personal observation and experiment, have denounced Koch's claims for the agency of the tubercle bacillus in the ætiology of tuberculosis, as the following expression appears to indicate: "The only men who attempted to repeat Koch's experiments, besides the work done in the Pathological Laboratory of the University of Pennsylvania, were Spina and Watson Cheyne." (*Philadelphia Medical Times*, Feb. 9, 1884, p. 339.) Furthermore, in the stand which he has taken with regard to the question of the ætiology of tuberculosis the author is undoubtedly upon the side of prevalent professional opinion in America, and perhaps also of widespread popular belief.

All these considerations would appear to justify a careful and extended review of our author's knowledge and opinions concerning the ætiology of so fatal and widespread a disease as tuberculosis. Besides, the incalculable importance to the whole human race, for this and all future time, of Koch's discoveries, if they be confirmed; the skill, reliability, and experience of Koch in the investigation of minute organisms which may be the germs of disease; and the abundant, almost overwhelming array of strong, exact, and convincing proof, both original and confirmatory, which has been brought to the support of this new theory—make it the bounden duty of every physician, who would properly regard his obligations, not only to searchingly scrutinize the proofs upon which this theory rests, but also at the same time to most rigidly examine the ground upon which its antagonists stand.

There is, therefore, no occasion to apologize for present-

ing either a partial or a complete examination of Dr. Formad's opinions concerning tuberculosis.

In the course of his remarks in discussion of the author's last paper, as appears by the record published in the "*Journal*," the writer took occasion to state that there were very many points assumed as demonstrated, and positive statements advanced in the elaboration of this paper, which he believed to be without sufficient foundation. The letter of Dr. Formad has already been spoken of as characteristic. It is in some degree also characteristic of his already published papers upon tuberculosis, as will perhaps shortly appear. In the following incomplete review, by quoting the author against himself in refutation of some of his important assertions and conclusions, and by quoting the words of other authors in refutation of assertions and conclusions for which he has made them responsible, the endeavor will be made to show that our author has not only misrepresented other authors than Koch, but that he has repeatedly, even in the most important matters, misrepresented and flatly contradicted himself. Furthermore, it will be shown, by evidence which the author can not successfully repudiate, that he has misrepresented the extent and character of observations reported. Fully appreciating the gravity of such charges against the publications of one who would authoritatively treat of the ætiology of such a disease as tuberculosis, we now proceed, as far as space and time will permit, to substantiate them.

Toward the end of his second paper on Tuberculosis, Dr. Formad submits "a brief analysis and summary of experiments made and evidence offered in relation to the question of the parasitic origin and specific nature of tuberculosis."

Apropos of this, he continues as follows: "For the establishment of a theory in regard to a parasitic origin of a disease by means of experiments upon animals, etc., the following propositions must be affirmatively decided:

"1. *The disease produced experimentally in animals by means of inoculation with products of human disease must be proved to be identical with the disease occurring spontaneously in man.*" (*Phila. Med. Times*, April 5, 1884, p. 488, right column, par. 3.)

The author thus concludes the consideration of this proposition: "The proof, then, upon this point—the supreme one for the settlement of the question of the nature of tuberculosis—is yet to be furnished." (*L. c.*, p. 490, par. 1.)

What are the grounds upon which this conclusion is based, and how is it arrived at?

In partial conflict with the foregoing conclusion are the following words of the author found in the sentence immediately preceding: "Judging from my own experiments, there is to my mind no doubt that some forms of artificially induced tuberculosis in animals acquire gradually characters which make them identical with spontaneous tuberculosis in man or beast." (*L. c.*, p. 489, right column, par. 5.) In complete conflict with this conclusion are the following statements of our author: "In my previous studies, judging from the literature alone, I was fully impressed with the idea that tuberculosis had a specific exciting cause, and that it could be induced by inoculation with tuberculous materials. Moreover, having made numerous inoculations

with tuberculous matter, I convinced myself of this fact. . . . But at the same time, after repeating, under various modifications, the well-known control experiments, I found that, beyond doubt, even true tuberculosis could be produced by substances other than tuberculous." (*L. c.*, p. 493, right column, pars. 4 and 5.) "There is no doubt that Koch's tubercle bacillus, when isolated and cultivated for many generations and then inoculated into certain animals, is capable of inducing tuberculosis, or a nodular eruption not distinguishable from it, more readily than other irritants, so far as tried." (*L. c.*, p. 491, right column, par. 4.) "Although the tubercle bacillus is more liable to excite tuberculosis in an already inflamed and ill-nourished soil than all other simple irritants so far tested, it (the bacillus) might be readily substituted by other irritants." (*L. c.*, p. 493, left column, par. 2.)

We fail to rightly understand the meaning of language and the common methods of ratiocination and sequence of thought if the man who uttered these expressions did not believe in the undoubted identity of human tuberculosis and that produced experimentally in animals. In further conflict with this conclusion is the following statement of the author: "Spontaneous animal tuberculosis is unquestionably identical with human tuberculosis. There are a few morphological specializations which I mentioned in a former chapter—e. g., in tuberculosis of birds and in bovine tuberculosis, or pearl disease; but the essential peculiar histological features are the same in all. Tubercle bacilli appear also to be present in nearly all cases of spontaneous animal tuberculosis. I detected bacilli in a tuberculous bronchial lymph-gland from a phthisical tiger, which I had kept in alcohol for eight years, and in one from a monkey of more recent date; and several times I found bacilli in spontaneous bovine, chicken, rabbit, and guinea-pig tuberculosis. I also studied tuberculosis in the bear, lion, leopard, and in a large variety of apes (dead of phthisical consumption from the Zoological Garden), with results identical with those obtained from studies in man. But this was long before the outbreak of the *bacillary campaign*, and, consequently, Koch's parasite was not looked for in these latter cases." (*L. c.*, March 22, p. 453, right column, par. 5.) Possibly the rabbits which the author has so frequently chased may be responsible for this extraordinary doubling.

It may, perhaps, not be necessary to go further into an examination of the manner in which the conclusion as to the first proposition has been reached. But it may be at least interesting, and possibly also instructive, to the plain, straightforward, common-sense student of medicine to learn something more of the mysterious ways by which an uncommon mind grasps conclusions.

Our author views his first proposition from three different standpoints, in the order here mentioned, viz., inoculation, inhalation, feeding. Let us for convenience reverse this order and commence with the last, viz., *feeding*.

We quote one of our author's arguments in support of his already-mentioned conclusion: "The following deserves a passing mention. According to Orth (Virchow's 'Arch.', vol. lxxvi) and Bollinger ('Arch. f. exper. Path.', vol. i),

there is some doubt as to the identity of human and animal tuberculous."

Let us see whether or not these authors are responsible for that statement.

Professor J. Orth ("Experimentelle Untersuchungen über Fütterungstuberculose," Virchow's "Archiv," vol. lxxvi, p. 234), says: "I hesitate not for this affection [he is speaking of the disease produced in animals by feeding with tuberculous matter] to claim the name of tuberculosis. These irregularly eroded ulcers which proceed from caseous degeneration of minute nodules, these cheesy nodes formed by the confluence of cheesy nodules, these minute, isolated nodules themselves, with their reticulum and their many nucleated giant-cells—what else should they be other than tubercular ulcers, tubercular aggregations, isolated young tubercles, even if they are compared with human tuberculosis?"

And again, speaking of the constitution of nodules (p. 235), Orth says: "... all the nodules in my rabbits possess these characters; there exists, therefore, such a correspondence between the affection found (artificial animal tuberculosis) and human tuberculosis as can scarcely be imagined to be greater."

In his concluding remarks (p. 242), Orth says: "The possibility of contagion in animals once proved, there is the further conclusion also justified that contagion in man may be substantiated, . . . for I have already shown that tuberculosis in man and *Pertusucht* (bovine tuberculosis) must, according to their nature, be looked upon as identical diseases."

Now let us turn to the other authority mentioned by our author.

Professor O. Bollinger ("Ueber Impf- und Fütterungstuberculose," Arch. f. exper. Path., vol. i, p. 363), as one of the conclusions drawn from his own experiments, says: "Inoculation with tuberculous matter from man produces in the dog a genuine miliary tuberculosis of the pleura, lung, liver, and spleen; usually, however, in carnivora no reaction at all, or only a local inconsiderable effect, is produced."

Apropos of a miliary tuberculosis of the peritonæum, liver, and lung, induced in a goat by combined inoculation and feeding with cheesy matter from the tuberculous lung of a cow, Bollinger (p. 360) says: "Corresponding with the resemblance of the macroscopic appearance to miliary tuberculosis of the human peritonæum, the microscopic examination of the miliary eruption yielded a perfectly analogous and identical structure."

Furthermore (p. 369): "As to infectiousness, tuberculous material from man and cow appear to be very similar." And again (p. 370), speaking generally, he says: "In agreement with the gross resemblance, the tubercle, produced by inoculation and by feeding, of the dog and the medium-sized domestic animals is also histologically identical with human tubercle."

A foot-note (p. 371) reads: "I have lately had an opportunity to observe a classic spontaneous miliary tuberculosis of the lung of a sheep, which in no manner differed from that of man."

The last words we will quote from Bollinger are found upon p. 371: "If direct infection experiments upon man are at the present time wanting, nevertheless tuberculosis of the human intestines, which occurs secondarily in tuberculosis of the lungs, affords such an important analogue of the results of feeding experiments, and therewith so striking an example of self-infection through the swallowing of sputa, that one can, with great probability, admit the possibility of an infection by importation of the virus with the food."

So much for the real words and opinions of Orth and Bollinger as they themselves have expressed them in the papers referred to by our author. It might not be entirely out of place to remark that they also were written before the "bacilliary campaign" was inaugurated by Koch. We might modestly suggest that here is another opportunity for the author to display his unchallenged ingenuity. Which will he prefer? To retract his assertion, to deny his own words, or to insist that Orth and Bollinger never wrote as they did?

The next standpoint, in the reverse order above mentioned, from which our author considers his first proposition is that of *inhalation experiments*. Still pursuing our original plan, we first quote the argument of our author:

"Tappeiner's induced inhalation tuberculosis of dogs (Virchow's 'Arch.,' lxxiv, 1878, and lxxii, 1880), so much relied upon by Koch and others for the establishment of the mode of the spreading of phthisis, and partly of the bacillus doctrine itself, has been proved to be a fiction. Tappeiner, as so often quoted, subjected dogs to an atmosphere heavily charged with phthical sputum, so that the dogs were nearly bathed in the latter (known to contain bacilli) for weeks. But, in spite of this, the animals grew fat, if anything, and, after the lapse of a certain time, acquired local pulmonary affections in the form of nodules, not likely to have been tubercular in their nature, of which only in one case were some observed in the liver and kidneys.

"The experiments of Schottelius (Virchow's 'Arch.,' lxxii, 1878, and xci, 1883), Wargunin and Rajewsky ('Vratsch,' No. 6, 1882), Weichselbaum ('Centralblatt,' No. 19, 1882), and others, and my own experiments also (to be reported subsequently), make Tappeiner's assertions perfectly untenable. Tappeiner's own account of his experiments, and the microscopical description of the structure of Tappeiner's 'tubercles' by Grawitz and Friedländer in Virchow's Institute, clearly indicate that he had nodular broncho-pneumonic foci, and not tubercles." ('Phila. Med. Times,' April 5, 1884, p. 489, bottom of left and top of right column.)

Let us examine some of these statements and see how our author contributes to "the proof" that "Tappeiner's induced inhalation tuberculosis of dogs" is "a fiction." His objections to Tappeiner's experiments and conclusions appear to embrace four points: *a*, that the dogs were bathed for weeks in an atmosphere heavily charged with sputum; *b*, that they grew fat, and only in one instance showed disease of other organs than the lungs; *c*, that the disease produced was not tuberculosis, but broncho-pneumonia; *d*, that other experimenters (including himself) have produced broncho-pneumonia by inhalation of indifferent substances. Turn-

ing to the records, we see how truthfully our author has represented them.

Opposite the first point, *a*, we place the record of Tappeiner's experiments.

Tappeiner ("Ueber eine neue Methode Tuberculose zu erzeugen," in Virchow's "Arch.," Bd. 74, 1878, p. 394) says: "For all the experiments, the sputa were obtained from persons who were afflicted with tuberculous cavities of the lungs; from a teaspoonful to a tablespoonful thereof an emulsiform but transparent fluid was secured by dilution with 300 to 500 ccm. of water, which was conveyed to the experimenting-box by means of a steam atomizer attached to the outside. For experiments 1 to 8, the (inhalation) box—the dimensions of which were 1.12 metre in depth, .82 metre in breadth, and .86 metre in height—was open upon one side, being closed only by means of a grating, before which during the inhalation itself a waxed linen curtain was hung. Through a hole in the latter the stream from the atomizer entered the box. In experiments 1 to 4 the animals were subjected to inhalation twice daily for one hour at a time, and they remained the rest of the time in the box; in experiments 5 to 8 they were subjected to inhalation barely once daily, and the rest of the time were allowed to go free. In three further experiments the dogs were confined during the inhalation—given once daily, with a very small amount of sputa, a teaspoonful in three days—in a roughly planked box of 12 cubic metres contents, in which, through numerous gaps in the walls, the air could pass in and out. As animals for experiment, dogs were exclusively selected, because they, according to Professor Bollinger, are only with exceeding rarity attacked with tuberculosis; in every case they could move freely about the inhalation-room, and, therefore, were not directly subjected to the stream from the atomizer."

Opposite the second point, *b*, we again place the records of Tappeiner's experiments.

Tappeiner (*loc. cit.*, p. 395) says: "The following are the results of the same eleven (experiments) performed according to the above-described methods, with a statement of age, weight of body at the beginning and at the end of the experiment, as also the duration of the latter:

"No. 1. Age, three years; weight at beginning, 6 kilogr., at end of experiment, 5.5 kilogr. Continuance of inhalations, 42 days. Autopsy: Pleural surface and parenchyma of both lungs thickly infiltrated with minute gray, semi-transparent nodules; in the kidneys and the liver, similar nodules in less number; the remaining organs were, at least by macroscopic examination, found uninvolved and normal.

"No. 2. Age, six months; weight at beginning, 8 kilogr., at end of experiment, 7 kilogr. Duration, 45 days. Same result as in previous case, only the nodules larger, confluent, less transparent, more yellowish.

"No. 3. Age, four years; weight at beginning, 20 kilogr.; duration of inhalations, 24 days; no loss of body-weight. Autopsy: Both lungs, as in previous cases, full of nodules, also visible discreet nodules in the kidneys.

"No. 4. Weight, 5 kilogr.; duration of inhalations, 25 days. Autopsy: Numerous miliary nodules in both lungs."

To these four observations may be added the following, found recorded in Tappeiner's second article—"Neue experimentelle Beiträge zur Inhalationstuberculose der Hunde." (*L. c.*, lxxii, November, 1880.)

Tappeiner (p. 354) says: "For control (of experiments by inhalation of supposed indifferent matter) I allowed at the same time two other dogs, Nos. 1 and 2, in other inhalation-boxes (they were a metre square), to inhale phthisical sputa in the same minimal dose of half a gramme for both dogs."

It may be remarked, by way of explanation, that a half-gramme of phthisical sputa diluted with 100 grammes of water was used for inhalation once daily, fifteen minutes at a time, for ten days; at the end of the inhalation the dog remained in the inhalation-box four hours, and afterward was taken to the common dog-kennels of the veterinary school.

Of the results of these experiments Tappeiner speaks, p. 354 (*l. c.*), as follows: ". . . , while with Nos. 1 and 2 the spleen, as well as both lungs, was studded with numerous gray translucent nodules of the size of a millet-seed. . . . Virchow's second assistant, Dr. Grawitz, pronounced them undoubted true tubercles, both macroscopically and microscopically. . . . Dog No. 1 weighed 13 pounds at the beginning and 11½ pounds at the end. No. 2 weighed 11½ pounds at the beginning and 10½ pounds at the end."

At this time Tappeiner also conducted a series of experiments to discover, if possible, the length of the incubation period—I, *e.*, the time at which the first visible outbreak of tubercle occurs after the beginning of the inhalations. Several examples of loss of body-weight are noted.

The following quotation is introduced, not so much to relate another instance of loss of body-weight after large quantities of phthisical sputa inhaled as to show that not only Tappeiner witnessed the results of his experiments, but often also other trustworthy and experienced men supervised them.

Further, Tappeiner says (p. 358): "At my departure, on August 24th, I left in the dog-kennels of the Pathological Institute dogs Nos. 11 and 12. Both had . . . for fifteen days inhaled large doses of phthisical sputa, and hence must already have been infected with tubercle. One of these was killed by Dr. Grawitz on October 22, 1879, and the note of the autopsy was forwarded to me, on March 3d last, by Professor Virchow. It is in these words:

"Black poodle of Dr. Tappeiner, section Oct. 22, 1879. Small, extremely emaciated, hair almost entirely rubbed off on account of itch, black male poodle-dog. Belly greatly drawn in, covered with yellow adherent scabs.

"Heart firmly contracted, musculature dark-red, firm, valves unaltered.

"Left lung in places slightly adherent to the thoracic wall by a thin layer of fibrin; those places appear cloudy, yellowish-gray upon the surface. The pleura itself is smooth as a mirror; in it quite isolated numerous gray, translucent, miliary nodules are observable, the cut surface of which shows a very large number; at the already mentioned places where the pleura was cloudy a broncho-pneumonic infiltration is found, reaching the size of a walnut. The right

lung is smooth upon the surface; it contains in the pulmonary pleura and in the pulmonary parenchyma numbers of gray miliary nodules; in addition, small areas of flabby hepatization in the dependent portions. The spleen is slightly enlarged, hyperæmic, very dense: follicles small, distinct; no abnormality. The left kidney absent! In its place a stellate scar, and a firm, whitish-gray lymph-gland the size of a hazel-nut. Right kidney correspondingly large, although not altered. Liver large, hyperæmic, in no way abnormal. Intestine almost empty, mucous membrane pale, with abundant epithelial covering, indeed nothing.

"Diagnose: *Tubercula pulmonum et pleurae*.—Pleuritis fibrinosa recens partialis sinistra. Broncho-pneumonia catarrhalis sinistra et pneumonia hypostatica dextra. Hyperplasia lienis chron. Defectus renis sin. Hypertrophia renis dextri. Hyperæmia hepatis."

Thus it is proved that, instead of only "one case" in which Tappeiner observed nodules in other organs besides the lungs, as our author asserts, *no less than five such cases are reported in the two articles referred to*. Furthermore, no less than three of the authors whom Dr. Formad quotes for other purposes have mentioned Tappeiner's experiments as having shown that nodules similar to those in the lungs are of frequent occurrence in the other organs when the duration of the experiment has lasted long enough. The cases quoted above also show that, when the experiments were performed under certain conditions, the animals lost weight and became emaciated instead of "grew fat." The whole series of experiments reported by Tappeiner also show that the greater the amount of sputa inhaled the greater is the tendency to loss of weight. It is true that two or three of Tappeiner's dogs increased in weight, but, as a rule, they were those which had inhaled the sputum in smaller quantity and with less frequency. Yet even these dogs were found to have serious disease of the lungs.

Opposed to the third point, *c*, we submit the following:

The records show that the series of experiments reported in Tappeiner's first article in many cases passed under the eyes of such men as Schweininger and Buhl, and that the series of experiments reported in his second paper were performed in Virchow's Pathological Institute, and under the supervision of such men as Grawitz, Friedländer, and sometimes even Virchow himself. And yet our author seems surprised and bewails himself that "Tappeiner has been so often quoted," and "so much relied upon by Koch and others for the establishment of the mode of the spreading of phthisis." Our author should give some weight to the fact that these experiments also were performed before the commencement of the "bacillary campaign."

Whether or not Tappeiner, Schweininger, Buhl, Friedländer, Grawitz, and Virchow were capable of recognizing a genuine tubercle when they saw it, and were able to distinguish it from a broncho-pneumonic focus, I will not undertake to decide. But when I remember that these men were already renowned pathologists when our author received his medical diploma (which, by the way, was, if I remember rightly, the very year in which Tappeiner began his researches upon inhalation tuberculosis), I confess that,

for myself, I am strongly inclined to prefer their authority, opinion, and testimony as to what they saw.

Indeed, as to the authority of our author, if we are to judge a man by his utterances, it may justly be said that there is ample ground for grave doubt if he possesses really any definite notions as to what a genuine tubercle is or appears to be. Furthermore, what is quoted below in justification of this doubt would seem also at the same time to warrant a suspicion that he is, in addition, still far at sea and greatly befogged in his knowledge of the nature of tuberculosis and pulmonary phthisis, in spite of those "long years of research he has almost exclusively devoted to this subject."

On page 340 of the "Phila. Med. Times," Feb. 9, 1884, left column, par. 8, appears the following language of the author: "No definite understanding concerning a disease can be arrived at unless some fixed conception of the anatomical characters and various expressions of the lesions of that disease is formed. Thus, as regards the question of tuberculosis and pulmonary phthisis, the matter would be much simpler if a general understanding could be arrived at as to the definition of tuberculosis and phthisis in its different anatomical manifestations. *The pivot of the question* is what to call a tubercle or a tubercular lesion." After floundering about in the vain search for "the pivot" among some floating thoughts more or less related to the matter discussed, our author seems at last to give up and in pure desperation grasp at the conclusion that "therefore it is impossible to define tuberculosis either by its anatomical peculiarity or by the pathogenic property of its nodes." (See *l. c.*, next page, par. 4, left column.)

(To be concluded.)

RETRO-PHARYNGEAL ABSCESS.

By JOHN O. ROE, M. D.,
ROCHESTER, N. Y.

(Concluded from page 120.)

A male child, ten months old, had scarlet fever, from which he had apparently recovered two weeks before I saw him.

The course of the fever was mild; there was no marked inflammation about the throat, but there was considerable coryza and conjunctivitis. Shortly afterward the child began to manifest difficulty in swallowing, which gradually increased until he was unable to swallow anything and began to have some difficulty in respiration, and his voice was very much altered.

It was now feared by the attending physician that diphtheria was about to supervene on the scarlet fever, particularly as the fauces appeared red and much swollen, and there was also marked swelling of the neck, externally, on the left side.

I was requested by the attending physician to see the patient with him.

On thorough exploration of the lower pharynx with the finger, this swelling on the left side, which could be plainly seen on inspection, was proved, by its soft, doughy, fluctuating character, to be a retro-pharyngeal abscess, although it had not before been suspected.

Incision of the abscess was at once made in the manner described in the other case, and the child was immediately relieved. He rapidly recovered, and has had no trouble since. Eighteen months have now elapsed.

DIAGNOSIS.—An early diagnosis of this affection is of the utmost importance, for several cases are reported in which death resulted from failure to detect the abscess during life.

Dr. C. Elliott* reports a case in a child, three years old, who died apparently from exhaustion, with marked nerve irritation and spasms. On post-mortem examination, a retro-pharyngeal abscess was discovered.

A case is reported by Gyselyncx,† and another by Gibney,‡ in which the abscess was only discovered after death. Cases are also reported where the abscess was not discovered until after the children had ceased breathing, but, on opening the abscess immediately and employing artificial respiration, they recovered. Such cases are reported by Smith,* Cayley,|| and Sands.△

The two means of diagnosis on which we should solely rely in making an examination for retro-pharyngeal abscess are inspection and palpation. The former is sufficient in those cases where the swelling is located in the central portion of the pharynx, but those located high up or low down can not be seen. Thus, in the case referred to, reported by Elliott,◇ repeated inspections of the throat were made, but the abscess, which was found on post-mortem examination located high up, was undetected. Also, in the one reported by Gibney,‡ the abscess was so low down that it could not be seen during life.

Inspection of the pharynx in young children is in many instances no easy task. In the case of a struggling child with its narrow pharynx, which is usually filled with mucus, and often with eructations of milk caused by the gagging induced by the presence of the tongue depressor, the examination is generally very unsatisfactory in its results.

Palpation with the finger is, therefore, not only indispensable in diagnosing retro-pharyngeal abscess, but is, in fact, the only reliable means of arriving at a correct diagnosis.

In those cases where a swelling is suspected but can not be seen, the finger is indispensable to discover its location; and, when it can be seen, the finger is also indispensable to determine its true nature—whether it is fluctuating and contains pus, or whether it is an aneurysmal tumor palpitating synchronously with the heart; and to differentiate an abscess from fibrous, osseous, or other tumors which may occupy the pharynx.

On suspecting an abscess that can not be seen, the vault as well as the lowest portion of the pharynx should be thoroughly explored with the finger. To facilitate a more thorough examination of the fauces, especially in obscure cases, Giralde's‡ has recommended the employment of chloroform, a procedure which Schmitz‡ condemns. He says: "Never

* "British Med. Jour.," May 3, 1879, p. 663.

† "Archives médicales belges," 1881, third series, vol. xx, p. 116.

‡ "New York Med. Jour.," vol. xxii, 1875, p. 626.

* "Brit. Med. Jour.," May 17, 1879, p. 736.

|| "Indian Med. Gazette," Calcutta, vol. xiv, Aug. 1, 1879, p. 232.

△ "Medical Record," N. Y., vol. xxii, 1882, p. 106.

◇ "Brit. Med. Jour.," *loc. cit.*

‡ "New York Med. Jour.," *loc. cit.*

§ "Leçons cliniques sur les maladies chirurgicales des enfants," Paris, 1869, p. 361.

‡ (*op. cit.*)

would I think of chloroforming a child for the purpose of making a thorough examination, as recommended by Giraldès."

Bókai, in describing his method of making a thorough examination, and, in cases of diphtheria, of protecting his finger by keeping the child's jaws apart with Ulrich's oral speculum, or, in its absence, a spoon-handle or piece of wood wrapped with cloth, says: "I have never failed in making an examination, nor has it ever entered my mind to follow Giraldès's peculiar advice to use chloroform. I hope," he says, "that this advice will also not be followed by others."

Pauly,* on the contrary, says that he does not agree with Schmitz and Bókai as to the danger of the use of chloroform, for the reasons that,

1. The danger of suffocation is not increased by the use of chloroform, as illustrated in operations of tracheotomy for croup.

2. The exploration can be made more thoroughly, and the operation can be done by inverting the child while under chloroform, or hanging it down over the edge of the table, as proposed by Rose and Wolf.

Judging from the relief which I have seen chloroform give in cases of laryngeal obstruction from different causes, I am inclined to agree with Pauly that the use of chloroform is advisable in obscure cases where a thorough exploration is necessary, and for the purpose of quieting an ugly child to facilitate the operation of opening the abscess. As so little chloroform is required, the only real danger is in the escape of pus into the larynx, which can be readily prevented by depressing the head.

COMPLICATIONS.—Among the dangers that may arise to complicate this affection and to threaten the life of the patient, the principal one to be guarded against is suffocation, either from rupture of the abscess and the sucking of pus into the larynx, from closure of the larynx by the direct pressure of the swelling, or from secondary œdema of the glottis.

Rupture of the abscess spontaneously in a child during sleep is almost invariably fatal from suffocation.

Justi† refers to several such cases of suffocation in bed from rupture of the abscess, reported by Opolzer in his lectures edited by Stoffella.

In other instances of spontaneous rupture of the abscess the quantity of pus may be so great as to suffocate the patient, as in the case reported by Gaupp.‡

Edema of the glottis is by no means of infrequent occurrence in fatal cases of retro-pharyngeal abscess, as the result of burrowing of pus into the ary-epiglottic folds. Schmitz § reports the occurrence in a child six months old. Laryngeal œdema in adults is also a frequent and serious occurrence in cases of retro-pharyngeal abscess, and also as accompanying abscesses occurring in the other visceral spaces of the neck.

Dr. Lidell* has, in his very excellent article, collected from various sources ten different cases of abscess in the cervical region in adults, three of which were retro-pharyngeal.

One is reported by Dr. Levestin,† occurring in a peasant aged forty-six. The abscess followed typhus and gastric fever. Dyspnoea became urgent, and tracheotomy was performed, notwithstanding which he died two days later from asphyxia. The autopsy revealed an abscess behind the lower portion of the pharynx.

Convulsions are a complication that frequently arises, as seen in the cases reported by Elliott, Bókai, and Schmitz.

Bókai has also observed facial paralysis in four cases.

Death from hæmorrhage, from opening of the carotid or its branches after the opening of the abscess, seems to be a not very infrequent complication.

Dr. Carmichael‡ reports a case of a child, five weeks old, in which pharyngeal abscess was diagnosed but not opened. Next day the child died suddenly from hæmorrhage from rupture of both the abscess and the carotid. A post-mortem showed the abscess to be the cause of the softening of the coats of the artery.

Similar cases are also reported. Thus,

Gautier § reports two cases of sudden death from hæmorrhage.

Bókai|| reports a case of a child, four years old, that died from the abscess opening the carotid.

Lidell cites the case of a young man,^Δ aged fifteen years, who had a swelling in the back of his throat and the sides of his neck, which was not opened. Sixteen days afterward hæmorrhage occurred from his mouth and nose, and two days later an abscess opened spontaneously in his throat. On the second and fourth day after there was more hæmorrhage. During the fourth week the abscess burst a second time, and the patient soon died suddenly from hæmorrhage. The post-mortem showed caries of the anterior surface of the body of the atlas, and an abscess cavity located between the right tonsil and parotid gland, involving branches of the carotid.

In this case it was considered that the caries was the cause of the abscess, but to my mind it was just as certainly the result of the erosive action of the pent-up pus as the giving way of the arterial vessels was. In fact, I am quite of the opinion that, in some of the cases where disease of the vertebrae is found in connection with an abscess that has remained unopened for any considerable length of time, either in adults or children, the disease of the vertebrae is much more likely to be the result rather than the cause of the abscess, as is the case with the giving way of the resisting coats of the arteries.

* "On certain Abscesses of the Neck which may cause Sudden Death," etc., *Am. Jour. of the Med. Sciences*, Oct., 1883, p. 321.

† "Hygieia," Ed. xvi, p. 692. New Sydenham Soc. "Year-Book," 1861, pp. 248, 249.

‡ "Transactions of the Edinburgh Obstetrical Society," vol. vi, 1880-'81, p. 132.

§ "Des abcès rétro-pharyng." etc., *loc. cit.*, p. 138.

|| "Jahrbuch für Kinderh.," *loc. cit.*

Δ Reported in "Würtemb. Correspond.-Blatt," xiv, 1858. Holmes's "System of Surgery," 2d ed., vol. i, p. 133.

* "Berlin. klin. Woch.," xiv, 1877, p. 311.

† *Op. cit.*

‡ "Würtemb. Corr.-Bl.," xi, 1870, No. 23. Cited by Mackenzie.

§ "Dis. of the Throat and Nose," Lond., 1890, vol. i, p. 21.

Op. cit.

Dr. Cohen* cites a case reported by Reeves† which clearly confirms this statement. At the time of death an abscess was in the course of production. Examination showed the periosteum and common anterior ligament gone in parts, and the bone exposed and eroded in patches—evidently the result of the pressure of the abscess, inasmuch as the bones were not carious and the joints were intact.

TREATMENT.—In all cases where pus can be detected it should be immediately evacuated. From a study of fatal cases of retro-pharyngeal abscess, it is seen that in the majority of them death resulted either from failure to suspect the abscess and seek for it, or from failure to find the abscess when suspected, as is shown in several cases cited; or from failure to open the abscess promptly when detected, thereby preventing the occurrence of suffocation; or from the burrowing of the pus into the deeper tissues, which may occasion the softening or ulceration of the coats of important blood-vessels and other tissues.

From this failure to timely detect and to open the abscess unquestionably many lives of children, and of adults also, have been sacrificed that might have been saved. Henoch‡ cites a case in which a colleague, who wished to keep the patient in question until the next day for clinical demonstration, paid for the delay by the sudden death of the child during the night from suffocation.

The method of opening the abscess and the location of the incision depend on the seat of the abscess. If it points or is found bulging into the pharynx, a free incision into its most dependent portion is necessary only. If there is marked swelling of the side of the neck, with the formation of pus, external incision is often also necessary. In sixteen cases reported by Schmitz, three were opened externally and five both externally and internally. Bókai reports two cases that were opened both externally and internally.

Various methods have been from time to time proposed for opening the abscess, as the trocar and cannula, the aspirator, the guarded bistoury, and the finger-nail. The use of the aspirator and trocar was suggested to prevent the escape of pus into the larynx. Care should, however, be exercised in their use lest injury be done the vertebrae.

Albert* adopts the plan of making a very small incision at first, to allow the pus to escape slowly and not suffocate the child, and afterward enlarges the incision.

Justi employs a retro-pharyngotome of his own device, which is figured in his article.

Schmitz has devised a knife with a concealed blade which can be thrown out when it is *in situ* against the wall of the abscess. By it danger of wounding other parts is avoided when the child persists in struggling. Before devising this knife, Schmitz on one occasion attempted to open an abscess with a bistoury, when the tongue of the child slipped from under his finger and the knife was plunged into the tongue. Hemorrhage was so copious that the blood was sucked into the larynx and the child became asphyxiated.

It was, however, resuscitated by introducing a female catheter into the larynx and employing artificial respiration.

In opening deep-seated abscesses, Steffen* recommends counter-pressure on the corresponding side of the neck with one hand while the index-finger of the other is passed in deeply behind the larynx.

Chiene has proposed that in every case of retro-pharyngeal abscess the opening be made externally, and (although Dr. George McClellan,† of Philadelphia, had used antiseptic dressings prior to 1848 in the treatment of cervical abscesses after they had been opened) he is the first to propose that the opening be done antiseptically after the method of Lister, which he describes in a communication to Duprés,‡

In eleven out of seventeen cases Schmitz found a fluctuating swelling behind the angle of the lower jaw (usually on the right side), and, on opening this, a direct communication could be shown between it and the pharyngeal abscess.

This same fact is shown in some of Bókai's cases.

In some of Schmitz's cases, where both an external and an internal incision were made, fluids and a probe could be passed from one opening to the other.

This clinical fact corresponds entirely with the known anatomical connection between the retro-visceral and lateral visceral spaces of the neck, and would render it eminently advisable to open the abscess externally in all cases where it tends to point externally, and where the pus tends to burrow and the deeper structures threaten to become involved.

This is advisable because—

1. Thorough drainage can be maintained and no secondary operations are required.

2. The pharyngeal wound is avoided in which foreign and irritating substances can lodge or sacs or pockets form, which has been complained of by some authors.

3. In cases of necrosis of the vertebrae, the opening of the abscess antiseptically and the use of antiseptic cleansing injections give the patient the best chance for recovery. In some cases, however, it is advisable to make both an internal and an external incision for the purpose of thorough drainage where the drainage by the external incision alone is insufficient.

Chiene reports a case of caries of the cervical vertebrae which he cured by adopting this antiseptic method.

In opening the abscess externally, the incision should be made along the posterior border of the sterno-cleido-mastoid to avoid the large vessels.

The cut is usually made with a knife, but those who have employed the director and dressing-forceps, as recommended by Hilton, in opening deep abscesses where important vessels are in danger of being wounded, will never attempt it by any other method. Those who have never adopted it should not fail to read Hilton* on the subject.

Hilton's method of opening deep abscesses about the neck and elsewhere is as follows: An incision is first made through the skin. Then a blunt-pointed grooved director is pushed into the swelling down to the pus. Then a pair

* "Diseases of the Throat and Nasal Passages," Philadelphia, 1879, 2d ed., p. 242.

† "Brit. and For. Med.-Chir. Rev.," Oct., 1873, p. 507.

‡ "Diseases of Children," Eng. trans., New York, 1882, p. 60.

* *Loc. cit.*

* "Jahrbuch f. Kinderheilkunde," 1869, S. 152.

† "Principles and Practice of Surgery," Philadelphia, 1878, p. 200.

‡ "La chirurgie et le pansement antiseptique," Paris, 1871, p. 242.

* Hilton, "Rest and Pain," New York, 1879, pp. 74 *et seq.*

of small dressing-forceps, with the blades closed, is forced along the groove down to the abscess, and, by partly opening the blades on withdrawing the forceps, a free opening is made.

Hilton reports a case of retro-pharyngeal abscess which he opened externally, and which he considered unsafe to open in any other manner. In this case there was caries of the cervical vertebræ which resulted in complete recovery.

In all cases more or less attention should be given to the general constitutional condition.

In adults the treatment required will depend on the cause or the disease of which the pharyngeal abscess is a complication.

In children there is usually added a scrofulous dyscrasia, which should be removed by appropriate anti-strumous remedies, and all known means at command should be employed to promote the invigoration of the child.

DISCUSSION.

Dr. DE BLOIS.—I have been very much interested in Dr. Roe's paper, embodying as it does the results of much laborious research, particularly as I myself have had three cases, one of which was in an adult and the two others in children. In one of them the incision had to be carried through the posterior pillar of the fauces. I differ with Dr. Roe as to making the incision a small one, and believe that it should be free and the pus be evacuated at once, but that after the incision the head should be forced down. If the patient is a child, it should be turned upside down. I think the position in which the head is carried—that is, very far backward—should be taken into account.

Dr. JOHNSON wished to call special attention to the horizontal incision and inversion of the patient—that appearing to be the most satisfactory method of evacuating the abscess.

Dr. JARVIS.—I think more stress should be laid upon the occasional occurrence of retro-pharyngeal abscess in connection with ordinary tonsillitis. A case of this kind has come under my observation in which the condition existed, along with acute suppurative of the tonsil, resulting in strangulation of the patient.

Dr. LEFFERTS.—The paper of my friend illustrates very well the relative value of theory and practice; its bibliographical research is large, but too speculative and theoretical in its results; no practical deduction can be drawn from it. His clinical cases, on the other hand, are plain and to the point. He tells what he has seen and done. One clinical fact well observed is worth pages of theory. Take, first, the matter of causation. Who in this audience of experts believes that nasal catarrh in children is ever a cause of retro-pharyngeal abscess? If it is so, why do we not see the latter oftener? Who believes that tuberculosis of the pharynx is ever a reason? Tuberculosis of the pharynx is the rarest of diseases; some deny that it ever occurs. Who has ever seen an injury to the posterior pharyngeal wall followed by abscess? And yet all these causes have been given us in good faith. Retro-pharyngeal abscess, aside from that form arising from caries of the cervical vertebræ, which must be rare, is probably due to a simple phlegmonous inflammation of the cellular tissues in front of the spinal column, arising from causes which produce similar abscesses elsewhere, and the reason of these is not always demonstrable. Take the matter of diagnosis. It seems to me that there is little value in speculating whether the patient's head is held forward or backward, whether inspiration or expiration is most affected, and the like variety of symptoms that have been given us. One look into the patient's throat is enough. Few conditions can be con-

founded with retro-pharyngeal abscess; a suppurating gumma is one. In treatment, again, why not sum the matter up in one word, by saying that a retro-pharyngeal abscess must be treated upon the same surgical principles as an abscess elsewhere in the body—open it and discharge its contents? I care not if the incision be transverse, or if it be made from below upward, or from above downward—all of which matters have been dwelt upon.

Retro-pharyngeal abscess must be rare. In literature how comparatively few examples are met with in comparison with all the cases detailed! Personally, I have seen but two examples, both in young children; both patients were operated upon by simple incision; there was no difficulty in the diagnosis; and both recovered.

Dr. COHEN remarked that the danger of suffocating the patient on incision of the abscess might be avoided by operating with the head pendent. As to the horizontal incision, recommended by one of the speakers, he believed that the danger of leaving a pocket in the lower portion of the abscess, in which pus might accumulate, had been mentioned by some authors as a reason for preferring the vertical incision.

Dr. DONALDSON stated that he had had but one case of retro-pharyngeal abscess, in a child three years of age. The tumor was so large as to fill up the naso-pharynx and extend down into the lower pharynx, pressing upon the epiglottis and thus causing considerable dyspnoea. Fluctuation was evident, and the diagnosis was easily made. In view of the danger of the pus flowing into the larynx from an incision with a bistoury, he selected a point situated high up, where the wall of the abscess was not very thin, and, introducing a fine aspirator-needle, drew off about an ounce of pus. After this he made a free incision, and the child was completely relieved. He thought the aspirator the best and safest means for emptying retro-pharyngeal abscesses.

Dr. GEORGE W. MAJOR stated that his experience of retro-pharyngeal abscess corresponded in the main with that of the fellows who had already spoken. There occurred to him at the moment three cases having a bearing on the present subject—two cases of abscess proper, and one that had been referred to as an abscess. The first case occurred in a child, aged four years, as a sequel of measles. The difficulty of breathing and swallowing was very great indeed, but was immediately relieved on incision and evacuation of the pus. The second case followed after cerebro-spinal meningitis. Swallowing, even of liquids, was almost impossible, and breathing dangerously embarrassed. On making an opening, immediate relief followed. The third case had been referred to him as one of abscess by an ophthalmic surgeon, whose clinic the patient was attending for a neuralgia and prominence of the left eye, from which no relief was had. Although palpation did not detect the presence of pus, and an exploratory incision revealed a growth evidently malignant, eighteen months subsequently, at the post-mortem, a large sarcoma was found to have caused absorption of a large portion of the base of the skull, and to have been pressing on the brain. The last case was referred to as showing the possibility of making an error in diagnosis in such cases.

Dr. LINCOLN.—To illustrate the fact that other operative interference than a simple incision in the posterior wall of the pharynx is sometimes necessary in order to get rid of the contents of these abscesses, I will refer to a case I was once summoned to see, in which the patient, a child three years old, was supposed to be dying. It had been under the care of a homœopathic physician, who had failed to recognize the true nature of the disease. The prominence of the abscess not only filled the back of the mouth, so as to stretch the soft palate, but caused a bulging on each side of the neck, under the angle of the jaw.

On incising the abscess in the pharynx, this part immediately collapsed, affording prompt relief from the threatened suffocation; but there was no perceptible change in the size of the swellings in the neck, although they seemed to be less tense. By introducing an aspirator-needle into each, they were readily evacuated, but on the left side it was necessary to repeat the operation twice.

Dr. MACKENZIE called attention to the possibility of confounding a gummy syphilitic tumor of the posterior pharyngeal wall with a retro-pharyngeal abscess, and related a case referred to him in which the mistake had been made by a brother practitioner.

Dr. E. FLETCHER INGALS was surprised that in the experience of others retro-pharyngeal abscess was so rare, though it had been rare in his own experience, which embraced but two cases. One of the patients was a child, about ten months of age, who had an abscess mostly above the palate, which had opened a few hours before he saw it. It was supposed to be due to the youthful indiscretion of its father. The second case was in a man, about fifty years of age, who came to him because of laryngeal trouble. The day he presented himself he had coughed out what had the appearance of being about one half of the ossified cricoid cartilage, the site of which was clearly seen upon laryngoscopic examination. About three weeks later a retro-pharyngeal abscess was developed, which progressed slowly, and finally opened spontaneously. About four weeks afterward he had been called to see the patient for symptoms which appeared to be those of cerebral disease. Owing to other engagements, he did not see the patient, but saw by the papers a day or two afterward that he had died of some cerebral disease. The cause of the retro-pharyngeal abscess seemed to have been the same as that of the meningitis which finally caused the man's death.

Dr. CHAMBERLAIN.—Two cases of retro-pharyngeal abscess have been under my observation. The first was during an epidemic of cerebro-spinal meningitis in Hartford, occurring in a child of about eight years. The abscess was situated behind the palate, and followed the usual course, healing after incision. The second case was apparently unique; at least I have seen no similar case recorded. The abscess was situated posteriorly to the left tonsil. As the case occurred in the country, its importance was not at first recognized. When urgent symptoms set in, I was sent for, but arrived too late. When the abscess opened spontaneously, very profuse hemorrhage followed, and death ensued almost immediately. Post-mortem examination showed that the cause of death was rupture of the internal carotid artery, from weakening of its walls by the abscess. It was extremely probable that the child had inherited some taint from the father, whose habits before marriage had not been above suspicion.

Dr. ROE, in closing the discussion, said, in reply to Dr. Leferts, that his only object in dealing with the theoretical points had been to direct attention to the conditions which might cause post-pharyngeal abscess, when the indications regarding diagnosis and treatment would be plain. But in many cases the symptoms were so obscure that, unless we took into consideration all the possible conditions, the true one might be overlooked. With regard to the rare complications, for instance that of necrosis of the vertebrae, he believed they might be avoided by early recognizing the disease and resorting to proper treatment. As to the occurrence of retro-pharyngeal abscess in children as a result of nasal catarrh, he coincided with the views of Broca, Jacobi, and others, that in many of the cases of post-pharyngeal abscess following diphtheria, scarlet fever, etc., in children, the patients suffered from the "snuffles," and the relation of the lymphatic channels in the region of the naso-pharynx to those

in the pharynx proper was such as to justify the opinion that inflammation affecting the former had led to inflammation and ulceration of the latter.

REMARKS ON GYNÆCOLOGICAL THERAPEUTICS.*

By J. H. EMERSON, M.D.,

PHYSICIAN FOR DISEASES OF WOMEN TO THE OUT-PATIENT DEPARTMENT OF
THE NEW YORK HOSPITAL.

I PROPOSE to run over very briefly the principal therapeutic agencies that I employ in my clinique at the New York Hospital, Out-Patient Department, stating what I conceive to be the indications for their use and the objects aimed at, and, so far as I can, the results believed to have been attained. Unfortunately, it will not be possible to formulate these with precision, the same remedies finding an appropriate use in numerous classes of cases, various affections existing in multiform combinations, and very many of the cases being chronic, and a good number curable by surgical procedures only, which are often of necessity almost indefinitely postponed. Still, I hope it may not be unprofitable to make such a review, for the sum of professional opinion regarding matters of every-day treatment is not made up from laboratory experiments in nearly so great a degree as from the observations of individuals, and even such humble contributions as this may modify or strengthen the views of my hearers, or, as I certainly hope, may elicit discussion and criticism here.

I use pessaries, chiefly the Albert Smith, the Thomas bulb, and the elastic ring; these for backward displacements; and as such are in my experience much more frequent than anteversions and antelexions, I have much less occasion to employ instruments for the relief of the latter. For cases of prolapse with a heavy uterus and a damaged perineum, I believe that such instruments only as have an external support would be of any value. Simple abdominal belts or supporters will often obviate the need of pessaries, especially in anterior displacements. I can not enter more fully into this topic.

Cutting operations of any importance, and even curetting, are inadmissible in patients who have to return on foot to their homes immediately after treatment, and therefore are not referred to at this time.

In regard to the hot douche, it is ordered in almost all cases as a matter of routine, and I find that in the class of patients I see at this institution there are few who can not afford a bed-pan. I therefore give explicit directions to them to use the syringe in connection with this article and in the recumbent position, using two or three quarts of water, as hot as it can be borne. I always try to make sure that the nozzle does not have a terminal orifice, and, in cases of patulous os uteri, or where complaint is made of pain after using the douche, I advise the bent and partly flexible nozzle devised by Dr. F. P. Foster.

Ergot is used in gynecological practice chiefly with three objects: one is to effect a reduction in the size of the uterus by promoting the contraction of its muscular elements and reducing the caliber of its blood-vessels, another

* Read before the New York Clinical Society, April 25, 1884.

is to check uterine hæmorrhage, and a third is in the treatment of interstitial and submucous fibroids. I would say that for nearly two years past I have employed the preparation of ergot made by Parke, Davis & Co., under the name of "*Liquor ergotæ purificatus*," and which I first tried on the recommendation of Dr. T. A. Emmet, who found it less nauseous and commonly better borne by the stomach than the fluid extract of the pharmacopœia. I have seen no reason to doubt its efficiency, and have met with few complaints of difficulty in taking it. Ergot when given with the first object has been eminently unsatisfactory. The cases in which I have used it have been mainly those of subinvolution, often associated with a greater or less degree of laceration of the cervix. In combination with the ergot, the local treatment has usually aimed at an unloading of the vessels of the uterus by the action of glycerin tampons and stimulating the blood-vessels to contract by the hot douche. Even after the use of the drug had been continued in some instances for many weeks, repeated measurements with the sound showed little or no decrease in the length of the organ, although the general symptoms of the patient and the appearance of the vaginal portion of the uterus indicated improvement. Patients with subinvolution, thus associated with and doubtless referable to lacerations of the cervix, are not apt to present themselves at the hospital until months after the confinement at which the injury was received—after a period, namely, during which the hæmorrhages, the leucorrhœa, the displacements, or other results of the original lesion have been developed, and have become the incentives which brought the patient for treatment. By this time the reconstructive impulse in the uterine fibers which exists after delivery and effects the involution of the organ has well nigh ceased, and the fibers no longer respond to the stimulus of ergot, to which they were so sensitive at an earlier period. I can hardly say that I have proof of the value of ergot given simply to arrest uterine hæmorrhage, although there are many cases in which I should feel that I was not right in withholding it. Still, in these same cases other measures, such as the hot douche and swabbing the uterine canal with tincture of iodine, are likewise resorted to—the effects of which are more palpable—so that one remains uncertain what the share of the ergot has been when the flow is checked. Few cases have presented themselves where the third use of ergot could be observed. The greater number of such probably find their way into hospital wards, and I have nothing to report in this connection.

There are cases of prolapsus uteri in the third degree, notably among washerwomen, or others leading laborious lives, who have to stand much and lift heavy weights. Many such have doubtless had their origin in a laceration of the perinæum, complicated probably with a subinvolved uterus, and when they apply for treatment can not afford the time required for operation, even though, in the case of some, nothing short of a closing of the vaginal orifice would secure them from a recurrence of the prolapse. Such patients have been benefited by the frequent introduction of cotton tampons saturated with the glycerite of tannin, and by a douche of cold water, to which I have sometimes added a few drops of the persulphate or perchloride of iron.

This may lead to the subject of iron. In a practice where no cutting operations can be performed, the need of those preparations of iron which are used locally as direct hæmostatics does not exist. I believe the tincture of the chloride of iron has a decided value in checking metrorrhagia, when given only on such occasions, but I also believe that the continued use of large doses of this drug by women who are liable to excessive flowing tends to aggravate rather than relieve the difficulty. This may be due in part to its constipating action, although this can generally be obviated by combining with it the tincture of nuxvomica. When anæmia is the most prominent feature, I rely chiefly upon Blaud's pills, finding them easily administered and assimilated, and less likely than some other preparations to occasion constipation or headache.

In that very common group of symptoms, viz., backache, constipation, leucorrhœa, "general debility," and moderate pelvic inflammation, I derive the most satisfactory results from the well-known combination of the sulphates of iron and magnesium with sulphuric acid, and perhaps a bitter infusion, given largely diluted. This is, of course, supplemented by the hot douche and by glycerin tampons.

It is almost needless to say that a very large number of cases receives hardly any other treatment than the hot douche, local applications of Churchill's tincture of iodine, supplemented by the glycerin tampon, and the exhibition of cathartics, preferably the salines, or those containing senna. I commonly use the mixture of sulphates mentioned just now, the compound licorice powder, or an infusion of senna, quassia, anise, and bitartrate of potassium, which latter serves a good purpose in relieving the flatulent dyspepsia which is so frequent an accompaniment of these affections. A measure on which I place no little reliance when the cervix is found engorged, firm, and dark, is scarification, repeated every few days; and under its use, even though the amount of blood drawn be but a few drachms, I have seen cervical catarrh diminish, erosions heal, and the vaginal portion of the uterus recover its natural consistence and tint.

I have not learned how to use either cannabis indica or hamamelis for the relief of uterine hæmorrhage, although I have made some trial of both; but gallic acid I find efficient for this purpose, and usually give it in doses of ten or twenty grains, dissolved in alcohol, to be taken in a wine-glass of water.

Ovaries, whether displaced or not, are often sensitive and painful enough for that symptom to demand special attention, and I have employed various sedatives, both by themselves and more commonly in connection with derivatives and counter-irritants. Thus, I have used blisters externally, as well as tincture of iodine; also tincture of iodine by itself and mixed with tincture of aconite root, painted upon the vaginal mucous membrane, as near as may be to the sensitive organ; belladonna by the mouth and applied *per vaginam* in an ointment with iodoform, as also the fluid extract of eucalyptus; bromide of potassium also by the mouth. I conclude that little direct relief to pain comes from any of these sedatives as applied *per vaginam*, any apparent good being more properly referable to the support

furnished by the cotton tampon, and to the derivative action of the glycerin with which it is often impregnated. Undoubted and prompt relief has been seen to follow a blister, and more gradually the painting of tincture of iodine over the painful region in the groin. It has appeared to me that something has been gained by the persistent administration of bromides and belladonna.

It is easy to satisfy one's self of the deodorizing, and presumably of the antiseptic, properties of the eucalyptus, even if it does not now maintain its reputation as an anodyne.

Here I may refer to two articles which have done good service in relieving the pain of dysmenorrhœa, viz., small doses of chloroform given by the mouth, according to an old formula, with camphor and peppermint water, and, secondly, chloral given as an enema.

As antipruritics, and to dull the sensibility at the orifice of the vagina in the slighter degrees of vaginismus, nothing has been so satisfactory as carbolic acid penciled on, or a 1-to-1,000 solution of bichloride of mercury. This latter salt, in a weaker solution, has proved most serviceable also in some cases of obstinate vaginal leucorrhœa, presumably of gonorrhœal origin. The infection appears to lurk in the follicles of the mucous membrane, especially of the fornix vaginæ, a region which ordinary douching and modes of dressing fail to act upon so effectively as upon the lower and more accessible portions of that canal, partly, no doubt, because there is here less distension of the mucous membrane, the deeper recesses of the folds thus escaping the action of the medicaments employed.

Finally, I may mention two drugs which, in my experience, have not deserved the reputation claimed for them by some recent writers. These are viburnum, as a uterine sedative, and apiol, as an emmenagogue.

A CASE OF HYPERTROPHY OF THE MUCOUS GLANDS OF THE LIPS.

By J. WILLISTON WRIGHT, M. D.,

PROFESSOR OF SURGERY IN THE MEDICAL DEPARTMENT OF THE UNIVERSITY
OF THE CITY OF NEW YORK; SURGEON TO BELLEVUE HOSPITAL.

FRANK W., aged eighteen, a native of the United States and a jeweler by trade, presented himself at the college clinic, December 7, 1881, on account of the unsightly appearance of his mouth, which he thought had existed ever since he could remember.

On examination, the mouth was found to be abnormally large, and, as the teeth were prominent and very irregularly placed in the jaws, the expression of his face when the mouth was opened, as in the act of laughing, was simply frightful. (See Fig. 1.)

The upper lip was disfigured by its unusual thickness and by the presence of two pendulous and everted folds of tissue covered by mucous membrane, one on either side of the middle line, projecting from the inside of the mouth, so as to form a double lip, each fold being somewhat thicker than the natural lip above it. The under lip was the seat of a similar eversion, consisting, however, of a single fold, but extending from one angle of the mouth to the other. (See Fig. 2.)

Both lips were dry, rough, and deeply fissured in many places.

On pinching these everted folds between the thumb and

finger, numerous small, more or less movable, bodies, the size of hemp-seed, could be distinctly felt. The patient stated that



FIG. 1.

the condition was not only a source of great inconvenience, owing to the irritation induced by the constant recurrence of fissures or cracks, but that it was made the subject of frequent and humiliating remark among his acquaintances, to such an



FIG. 2.

extent, indeed, that he was debarred from all social enjoyment, and that for several years past he had been in a reckless, despondent, and unhappy frame of mind, caring little what became of himself, and often seriously contemplating suicide.

The diagnosis of hypertrophy of the mucous glands of the lips having been made, the patient was advised to subject himself to an operation for their removal, a proposition which he accepted with positive enthusiasm, saying he would gladly sub-

mit to any number of operations which offered the slightest probability of improving the appearance of his mouth.

Operation.—A strong silk ligature was passed through the outer portion of the upper lip, just above the angle of the mouth on either side, and given into the hands of an assistant in order to thoroughly evert the lip and hold it in that position.

Two elliptical pieces of mucons membrane, extending from the frænum to the angle of the mouth and measuring half an inch in width at the widest part, were then dissected from either side of the inner surface of the upper lip and removed. Next the enlarged mucous glands, together with the thickened connective tissue in which they were imbedded, were snipped from the bottom of the wounds with curved scissors.

Both coronary arteries were freely exposed, but were easily recognized and avoided.

The wounds were then accurately closed with numerous fine points of interrupted suture, composed of a single strand of horse-hair.

The lower lip was treated in a similar manner, with the exception that a single semi-lunar-shaped piece of mucons membrane, with its convexity looking upward, was removed instead of two elliptical portions. This piece extended from one corner of the mouth to the other, and, like those of the upper lip, was something more than half an inch in width at its middle or widest part.

The wounds healed throughout by the first intention, one of the sutures being removed on the third day after the operation, though both lips remained somewhat swollen for about ten days. The patient was subsequently placed in the hands of a competent dentist, under whose skillful management his teeth were straightened and otherwise greatly improved in appearance.

April 26, 1882.—The lower lip is now perfectly smooth, all of the fissures having healed under the use of the dilute ointment of nitrate of mercury; it is normally thin, free from eversion, and of a satisfactory shape. The whole mouth is much smaller than before the operation, but the upper lip is still somewhat thicker than desirable, with a slight remaining tendency to eversion.



FIG. 3.

Patient etherized, and another thin strip of mucous membrane removed from the inside of the upper lip as before.

Union by first intention, and patient discharged at the end of a week.

Fig. 3 is from a photograph taken two months after the last operation.

April 25, 1884.—Saw the patient to-day and examined the mouth.

The lips are moderately thin, well shaped, and showing no tendency to eversion; they are perfectly smooth, free from cracks, and the scars resulting from the operations are almost imperceptible.

The moral effect of the operation has been even greater than the change in his physical appearance, though secondary to it, and is, therefore, the most interesting and satisfactory part of the history.

By removing from a conspicuous locality an unsightly deformity, it has apparently changed the whole current of the man's life, and, while giving him an infinitely better-looking face, has also developed a higher sense of self-respect, together with a largely increased capacity for social enjoyment.

THE SURGEON'S POCKET-CASE.

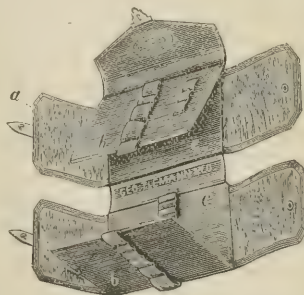
By FRANZ HEUEL, JR., M. D.,

SURGEON TO THE CITY HOSPITALS ON RANDALL'S ISLAND; PROSECTOR TO THE CHAIR OF SURGERY, AND INSTRUCTOR IN OPERATIVE SURGERY, AT THE MEDICAL DEPARTMENT OF THE UNIVERSITY OF THE CITY OF NEW YORK.

In the following description I wish to call attention to an improved pocket-case of instruments which I have used for some time, and which I have found of great utility. It was made for me by Messrs. George Tiemann & Co., of this city.

The average pocket-cases, as furnished by instrument-makers for the surgeon's use, are either too small, being mere dressing-cases, or too large and clumsy to be conveniently carried. In the former case the instruments are too few in number and too small to be practically useful; in the latter, containing many which are obsolete or have been supplanted by newer and better models. My idea of a surgeon's pocket-case is that it should be made of the best materials, contain the best of instruments and those of the most approved design, be a minor operating-case, and, in emergencies, be suitable for even the larger operations, at the same time not too large to be conveniently portable.

My case, which I usually carry in a chamois-lined hip-pocket, is five inches and a half long by three inches and a quarter wide, and one inch in thickness. It is made of alligator, seal-skin, or morocco leather, the latter being the cheapest and thinnest, while it is also very durable. It

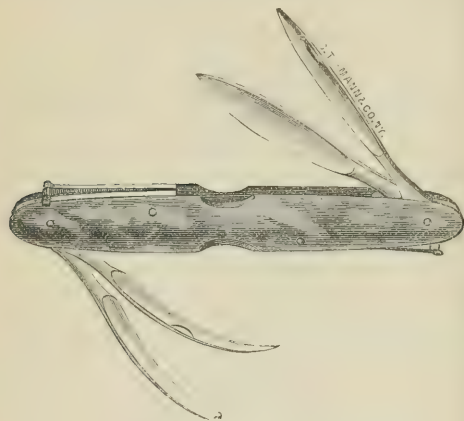


is lined with the best silk velvet, is four-folding, with retaining flaps (see *a* in accompanying figure), and has no

pockets, these being liable to tear. In opening, it appears like a two-fold case, having the thicker instruments as close together as possible, though not crowded on one another. Each flap (*b, b*) may then be opened, revealing (*c, c*) on one side the thinner instruments—such as probes, blunt dissectors, etc.—and on the other the needles, pins, etc., neatly arranged in rows upon the flap in the best of thick flannel (this not rusting them as chamois-leather would do if the case was dampened by perspiration), together with a variety of plaited and black iron-dyed silk, horse-hair, and catgut sutures, ligatures, thin isinglass plasters, etc.

The instruments consist of, firstly,

Knives.—These are two in number, and, like the one shown in the accompanying cut, are four-bladed, having spring catches and tortoise-shell handles.



The first contains a large and a medium-sized scalpel on one side, a blunt curved bistoury and Syme's abscess knife on the other.

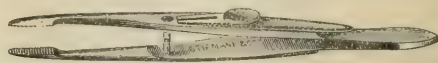
The second contains a small tenotome and small bistoury, a Graefe's linear cataract knife, and a half-curved canalicula knife. The gum lancet has been omitted from the case, since either of the scalpels, or the tenotome, will meet all of its requirements. The various-sized scalpels will answer for amputations, even up to the shoulder joint, removal of tumors, etc. Syme's abscess knife I prefer to the common, thick-backed, curved bistoury, as it is double-edged, and hence gives less pain in its introduction. Graefe's linear knife is very useful for amputating the fingers in children, while the half-curved canalicula knife is well adapted for opening styas, and for other delicate work.

Secondly, *Scissors.*—These have closed rings, which are preferable to those with open handles, as they are much steadier in the fingers. They are slightly curved on the flat, thus answering the purpose of both curved and straight scissors, which is a great desideratum in some cases, having one dull point for removing dressings without injuring the skin, and one sharp point to easily and painlessly cut sutures. They also have a French joint to admit of more thorough cleauing.

Thirdly, *Forceps.*—These are six in number, five of

which can be used for controlling hæmorrhage in case of necessity:

No. 1 is useful as a fixation, torsion, dressing, and dissecting forceps; it has an Esmarch's slide-catch, which is removable, so that the forceps may be thoroughly cleaned.



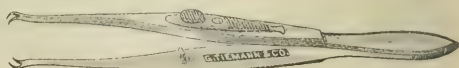
No. 2 is an Andrew's artery forceps with Esmarch's slide.



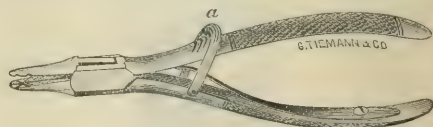
No. 3 is a combined polypus, dressing, and artery forceps, with ring handles, ratchet clamp, French joint, and longer jaws than those shown in cut.



No. 4 is a Piffard's grappling forceps with Esmarch's slide-catch. This I have found a very useful instrument in removing tumors, cysts, bullets, and foreign bodies.

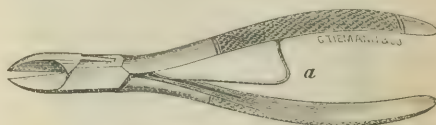


No. 5 is a needle forceps of my own design, with duck-bill jaws and a Russian catch, *a*.



It will hold with equal firmness a fine needle or a coarse instrument, giving a secure hold for the hand, and is very useful in removing splinters, needles, toe-nails, etc.

No. 6 is a small-sized, strong bone-cutting forceps, made after Liston's pattern, and having a reversible spring, *a*. The



cut shows the instrument ready for use; when in the case, the spring *a* is reversed to prevent spreading of the handles. It is very useful in operating about small bones like those of the hand, for cutting pins, wire, etc., and can be employed in a very small space.

Miscellaneous instruments:

The *Thermometer* is self-registering, well seasoned, and

placed in a thin coin-silver case having cotton in both ends to avoid breakage.

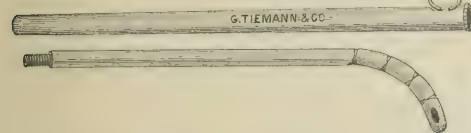
The *Hypodermic Syringe* has a graduated glass barrel with a fenestrated metal guard, and graduated piston-rod with screw adjustment, *b*.



Nested in the piston-rod are one coarse and one fine needle confined by a screw-cap, *a*. The projection *c*, beneath the shoulder of the screw-cap, is ground to fit tightly the top of syringe barrel when the piston is down. This, with the additional screw-cap *d* at the bottom, hermetically seals the barrel, thereby keeping the piston moist and in good working order for a long time, which is more than can be said of the majority of syringes, whose pistons easily become dry and utterly useless if not frequently used. In case of necessity the syringe may be used as an aspirator, but great care must be exercised to thoroughly cleanse it before again using it for hypodermic injection.

A small loop is left in the pocket-case for hypodermic tablets in the original bottle to take the place of the bottle of morphia solution or powders, which are usually carried.

A Tiemann & Co.'s new sterling-silver male and female *Catheter*, with a flexible jointed end, made in two sections, one nesting within the other, thus economizing space and saving the catheter from damage by pressure of other instruments.



A Weir's *Vaccinating Luncet and Comb*.



An aluminum *Caustic Holder*, which is non-corrodible by nitrate of silver, and which is fitted with an extra male thread to screw into the end of the catheter, if a longer caustic holder is desired. Within the extra male thread is



a female thread into which the probes, tenaculum, aneurysm needle, and double hook in the case can be screwed if a firm handle to either is needed.

On turning over the left-hand flap, *b*, of pocket-case, it discloses loops for the thinner instruments:

1. *Probes*, of which there are six varieties, each five inches in length and fitting a middle joint, with a female screw at each end, to make the probes fifteen inches long when it is desired to explore long sinuses, viz.:

Two sterling-silver probes, one with a large, the other with a small point. The large point, suitably bent and lengthened by other pieces, makes an excellent searcher for exploring the bladder in children.

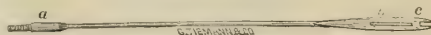
One very flexible whalebone probe for tortuous sinuses.

One Arnott's grooved probe to act as a fine director in narrow sinuses, and, in case of necessity, for external perineal urethrotomy.

TIEMANN & CO



One combined *porte-mèche*, *c*, and seton-carrier, *b*.



One flexible steel, extra-small Nélaton's porcelain-point (one sixteenth of an inch in diameter) bullet probe, especially useful in locating leaden fragments.

2. An *Aneurysm Needle* with a large eye.

3. A *Tenaculum*.

4. A *Volsella*, or double hook, each fitting into the caustic holder for a firm handle.

5. A combined *Tongue-tie* instrument and strong *Spatula*, which will act as a large blunt dissector or tongue depressor.



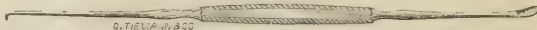
6. A combined, strong, spade-shaped *Dissector*, *b*, and sharp medium *Scoop*, *a*.



7. A combined, strong, square, blunt *Dissector*, *b* (useful in raising periosteum), and sharp, fenestrated *Bone Scoop*, *a*.



8. A Gross's *Ear Spoon and Hook*.



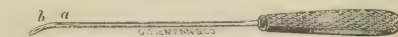
9. A combined, large, grooved *Director* and large, dull *Scoop*.

10. A large *Aspirating Needle*, five inches long, for exploring deep tumors, tapping hydrocele, etc. It has a



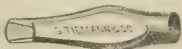
female thread inside the shoulder, *b*, for screwing on to the hypodermic syringe if suction is required. The shoulder at *b* is for attaching rubber tubing if desired.

11. A combined Post's and Buck's *Pin Conductor* for readily introducing pins in hare-lip suture. The groove of



the needle at *a b* is bridged over, forming a canal, which is closed at *a*.

12. A fenestrated *Punch* fitting into the needle holder for a firm handle for carrying out Neuber's wound draining



without drainage-tube (see article by Dr. A. G. Gerster, "N. Y. Medical Journal," vol. xxxix, No. 10).

Clinical Reports.

ROOSEVELT HOSPITAL.

CLINICAL REMARKS BY HENRY B. SANDS, M. D.

Strangulated Inguinal Hernia.

GENTLEMEN: An interesting case of strangulated hernia was admitted into the hospital last Friday afternoon. The patient was a driver of a beer wagon, who had had a hernia for several years. He had worn a truss, which, he said, broke on the morning of the day of his admission; and, while he was engaged in doing some heavy work, the hernia came down and could not be replaced. When he was brought here in the evening we found upon the right side an oblique inguinal hernia, tense and painful, and reaching down to the scrotum. The usual symptoms of strangulation were present, vomiting being persistent. Ether was administered at nine o'clock in the evening, and taxis, which had already been tried before admission, was repeated without success. Percussion over the tumor gave very little resonance, yet the symptoms were so acute that I thought there must be intestine in the hernial sac. I made an incision over the latter in the usual way, and, on reaching the deeper structures, found that no operation short of opening the sac would avail. The interest of the case turns upon a false inference which I made concerning the nature of the contents of the sac, which, as you are aware, usually contains more or less bloody serum in case the hernia is strangulated. This, in the present instance, seemed to be absent, as no fluctuation could be detected when the sac was exposed. Moreover, the sac was slightly resonant on percussion, indicating the proximity of intestine, while its tension was so great that I was unable to pinch it between my thumb and finger and separate it from its contents. Lest I might wound a possibly adherent coil of intestine, I determined to use a hypodermic syringe and ascertain whether there was fluid in the sac. The result of the procedure was what deceived me. I passed the needle to a depth of half an inch, and, on drawing back the piston, the syringe filled with a fluid which proved to be almost pure blood, having no fecal odor. Now, we frequently notice, in cases of strangulated hernia, that, after the taxis has been employed, the hernial sac contains blood and, inferring that such was the case here, and that the blood withdrawn by the syringe came from the hernial sac, I failed to observe due caution in performing the next step of the operation—namely, that of opening the sac—and accidentally wounded a piece of the small intestine which lay in contact with it. Fortunately, the incision was not extensive; it simply involved the peritoneum, and did not exceed a third of an inch in length. When the sac was laid open, it was found to contain no fluid, being completely filled by a loop of small intestine, which was intensely congested, and in some places ecchymotic. There can be no doubt that the bloody fluid which was withdrawn by the hypodermic syringe came from the in-

terior of the intestine, into which it had been effused in consequence of the strangulation and of the force which had been used in endeavoring to effect reduction. As I have remarked, the wound of the intestine made by the knife was very slight and superficial; but it might well have been serious; and we may learn from the occurrence how careful we always ought to be in opening a hernial sac. The operation presented no other feature of special interest. After the stricture, which was situated in the neck of the sac, had been divided by a hernia-knife, the protruded intestine became less livid, and, a few minutes later, the oozing from the injured part, which had been quite free, ceased spontaneously. Reduction was then effected, and the external wound closed with a continuous suture of catgut. The operation was followed by immediate relief, no unpleasant symptoms occurred, the wound healed by the first intention, and the patient is already convalescent.

Book Notices.

BOOKS AND PAMPHLETS RECEIVED.

Prevention and Restriction of Cholera. Document issued by the Michigan State Board of Health, July, 1884.

Quarantine and Commerce, their Antagonism destructive to the Prosperity of City and State, etc. Remarks of the President of the Board of Health of the State of Louisiana before the Representatives of the Exchanges and other Commercial Bodies, together with his Arguments before the Senate Finance Committee of the General Assembly of Louisiana, June 26, 1884.

Sixty-seventh Annual Report on the State of the Asylum for the Relief of Persons Deprived of their Reason. Philadelphia, 1884.

University of Bishop's College. Fourteenth Annual Announcement of the Faculty of Medicine, Montreal, Session of 1884-'85.

Memphis Hospital Medical College. Annual Announcement, Session of 1884-'85.

Medical Department, State University of Iowa. Annual Announcement, 1884-'85.

Woman's Medical College of the New York Infirmary. Sixteenth Annual Catalogue and Announcement, June, 1884.

An Introduction to Pathology and Morbid Anatomy. By T. Henry Green, M. D. Lond., etc. Fifth American from the sixth revised and enlarged English edition. With one hundred and fifty engravings. Philadelphia: Henry C. Lea's Son & Co., 1884. Pp. xx-17 to 481, inclusive.

Malaria and Malarial Diseases. By George M. Sternberg, M. D., F. R. M. S., Major and Surgeon, U. S. Army, etc. New York: William Wood & Co., 1884. Pp. vii-329. [Wood's Library of Standard Medical Authors.]

Post-partum Intra-uterine Injections of Carbolic Acid—an Inquiry into their Propriety. By H. v. Sweringer, M. D., Fort Wayne, Ind. [Reprint from the "Obstetric Gazette."]

Memoir on the Nature of Diphtheria. By Drs. H. C. Wood and H. F. Formad, of Philadelphia. Appendix A, Report of the National Board of Health for 1882. Pp. 51 to 133, inclusive.

Proceedings of the Eleventh Annual Meeting of the Oregon State Medical Society, held at Portland, May 27, 28, and 29, 1884. Vol. xi.

Gunshot Wounds of the Small Intestine. By Charles T. Parkes, M. D., etc., Chicago, Ill. Being the Address of the Chairman of the Section on Surgery and Anatomy of the American Medical Association.

London Water Supply. Report, etc., No. xli.

Forty-third Annual Announcement of the St. Louis Medical College, Winter Session, 1884-'85, and Catalogue for 1883-'84.

Announcement of the Twenty-fifth Annual Course of Instruction at the Miami Medical College of Cincinnati, with a complete List of its Alumni, and List of Matriculates of 1884.

First Annual Report of St. Mary's General Hospital, Brooklyn, N. Y.

Correspondence.

LETTER FROM PARIS.

The Cholera in France; its Comparative Mildness and Tractability.—The Question of its reaching Paris.—Dr. Koch and his Decoration.

PARIS, July 23, 1884.

THE leading medical topic at the present time is the existence of Asiatic cholera in some of the cities in the southern part of France. In view of the advanced state of our knowledge concerning the real nature of infectious diseases, the outcome of investigations made during this epidemic will be looked for with more than usual interest. The epidemic, thus far, has not been a severe one, the total number of deaths not equaling the daily emigration from Marseilles. During the week now ended the average daily mortality has not changed materially, except on one day, when it was so low that the dispatches announced "marked decrease." This morning the Parisian dailies exhibit the heading, "The Slow Epidemic."

The comparatively low rate of mortality can be explained in different ways. In the first place, epidemics, of either the same or different diseases, manifest varying degrees of violence. Again, prompt resort to decided measures for the arrest of an epidemic may exert a powerful influence. In the present instance it is altogether probable that both of these factors can be included in the explanation of the comparatively low rate of mortality. Moreover, the medical management of the patients after they have been attacked may reasonably be expected to do much toward lessening the rate of mortality. During the present outbreak a large percentage of the patients have recovered. Heretofore medicine has been comparatively powerless for affording relief to those who have been stricken with the genuine disease. But here, also, the fact must not be overlooked that success follows the administration of medicine in a far greater proportion of cases when the epidemic is mild, and conditions favoring its continuance and spread are carefully corrected.

The ubiquitous newspaper reporter is here, of course. But exactly where so many sensational reports come from is one of the mysteries of the calling which have not yet been solved, and probably will not be even by bacillus culture and microscopic examination.

It is rather remarkable that so large a proportion of the reports which, up to this date, have appeared in the New York dailies concerning the widespread terror in consequence of the epidemic, more especially in Paris, have been so extremely sensational. This is true, or else the promulgators have been more fortunate in acquiring news than the daily papers published in the capital of France. One might easily infer from some of the dispatches that Paris was fast becoming depopulated. There is nothing apparent here, however, to sustain the inference. To be sure, some have left; others have come; still others have refrained from coming; but Paris to-day presents

an appearance essentially the same as that exhibited in 1883 or 1882, except that its streets are cleaner, because extraordinary precautions are being taken concerning cleanliness.

Is the disease now prevailing in southern France true Asiatic cholera? Fovel said it was not. Koch says it is, and there seems to be no question now that his diagnosis is correct. Fovel, however, saw the *earlier* cases, and committed himself to an opinion. Koch saw cases *later* in the epidemic, when the diagnosis was not difficult. In the minds of reasonable medical men, the result does not argue either in favor of one or against the other investigator.

Has cholera spread from Marseilles and Toulon? It has, but not very far, and only to the smaller towns within a radius of a few miles. In each instance the number of cases has been small, and the authorities have at once had them in charge.

Has cholera reached Paris? No. It can be said, on the best authority, medical and governmental, that, up to the present date, not a single case of Asiatic cholera has occurred in this city. Will it reach Paris? The chances seem to favor the opinion that it will. Marseilles is depopulating itself at the rate of twelve hundred daily, and, of these, seventy come to Paris. It is a reasonable supposition that these seventy belong to the better classes, and that favors the idea that they will not become carriers of the disease. Exactly what may occur it is impossible to predict.

Koch came, and went, and has been decorated. It is a question whether the cross of the Legion of Honor was conferred so much for what Koch had done as to smooth over what the German Chancellor was about to regard as an awful insult given to the flag on the 14th of July. The old man with the gout has terrible twinges occasionally, and, if a piece of red ribbon in the lapel will serve the purpose of killing two birds with one stone, who can blame the foxy French for honoring the equally shy, scientific Koch?

However, Koch submitted to fumigation like a man, when he returned, said that if there was any cholera about him it was in his intestines, and went his way like a "plumed knight," wrapped up in the mysteries of bug-hunting.

Has he found the specific *microbe*? It is safe to say that no one knows—not even Koch. Micro-organisms elude proof positive with as great facility as the mosquito escaped the thump of the towel of Artemus Ward, who "hit the identical spot where the little gray cuss sot."

Besides, Koch will not bring his little gray cuss out, if he has got him, until the Frenchman has writhed long under the agony of an error in diagnosis.

Note on Dr. Van de Warker's Case of Laparo-hysterectomy.—Since our last issue went to press, containing an account of "A Successful Case of Laparo-hysterectomy for Uterine Fibroids," by Dr. Ely Van de Warker, of Syracuse, N. Y., we have received the following from the author:

Note, July 29th.—The ligature upon the uterine stump came away early in April. The lower extremity of the abdominal wound is now defined by a central depression 1 cm. in depth, at the bottom of which the uterine stump appears, slightly elevated, conical, smooth, and red, with a central opening that will receive a small probe, which corresponds to the canal of the cervix. The stump is firmly adherent to the abdominal wall, and will evidently never recede into the abdominal cavity. A light dressing of absorbent cotton, renewed twice a day, is required to keep the cavity dry. Mrs. B. has consented to have the uterine stump covered when the weather becomes cooler. The operation will consist in raising a flap of the integument upon each side of the abdominal depression and bringing them together over the stump. In this manner a condition that annoys the patient very much may, it is hoped, be removed.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.

Published by
D. APPLETON & CO.

Edited by
FRANK P. FOSTER, M. D.

NEW YORK, SATURDAY, AUGUST 9, 1884.

A MULTITUDE OF COUNSELORS ARRAYED AGAINST THE
CHOLERA.

WE have always given the gentleman whose letter from Paris appears in this issue of the journal credit for an exceptional amount of steadiness, and we have seen him show it under somewhat trying circumstances; but we now perceive that we have heretofore failed to do him full justice in that regard, for we have not had the slightest idea that he was the sort of man who could play the optimist amid such goings on as our French contemporaries tell us are now the order of the day in Paris in so far as the cholera is concerned. We are glad to see testimony to the effect that the gravity of the situation in France has been in some respects overdrawn, but, while the present decline in the virulence of the epidemic in Toulon and Marseilles must be said to be of cheering import, we do not see how the conclusion is to be escaped that at least there is enough of danger to the capital to have created a decided stir, not only with the general public, but also in the ranks of the medical profession, as exemplified by the avalanche of infallible preventives and cures that have met with more or less attention. Thus far in the ordeal, the medical profession in France, as represented in the leading societies, has borne itself with most admirable discretion. The problems presented by the outbreak in Toulon and Marseilles have been dealt with in a way that must be called exceedingly creditable. We have met with no indications of any such wrangling as took place last summer when the Egyptian outbreak was under consideration, nor has there seemed to be any disposition to conceal or pervert the facts as to the prevalence of the disease. The physicians and the sanitarians of France have set to work to renew their study of cholera in a matter-of-fact and business-like way, without posing either as skeptics or as alarmists, and, whenever local zeal has outrun discretion, the voice of the *Académie de Médecine* has been raised promptly in furtherance of the most reasonable and practicable course.

The course pursued by the French medical journals is to be spoken of in like terms. They have given very satisfactory accounts of the progress of the epidemic throughout, and they have not gone out of their way to advocate crotchets. Not the least commendable of the features that have marked the policy of the journals in question, it seems to us, is the disposition lately shown to make merry over the wild and chimerical suggestions with which the *Académie* has found itself afflicted. The moral effect of this way of treating the matter can not fail to be good. Apart from any such motive as this, however, there is indeed enough in the proposals made public to provoke mirth, if we may judge from an amusing account given by the "Union

médicale" of a recent meeting of the *Académie de Médecine*. The number of communications received by the secretary, all of which embodied wonderful propositions for the prevention or cure of cholera, was so great that that officer, after having read a few of them, felt compelled to desist, remarking that to read them all would take up the entire time of several meetings. These communications came from physicians and from men in other callings, from men and from women, each of whom was hot-headed in advocating his or her particular sovereign remedy. One of the correspondents urged "dry cleanliness" as the solution of the problem, meaning the omission of water and every other liquid in the toilet. Another proposed washing out the digestive tract with iodized water. A third recommended the internal and external use of oil of turpentine. A fourth thought it necessary to go deeper, and pursue the *microbe* in the blood itself, by means of intravenous injections of oxygenated water. A fifth upheld the policy of expelling the germ by a sweating-out process induced with pilocarpine. One ardent soul, more radical than the others, put his trust in the action of cold, and proposed to get the better of the cholera by creating an artificial winter—a feat easily enough accomplished, he said, as it was only necessary to "suppress the sun," which could be done by sending a part of his rays back into space with the aid of a combination of mirrors, and by absorbing the rest! Another correspondent, perhaps, as the "Union" suggests, a trifle malicious, called for a convention, to be made up of all physicians who professed to have a sovereign remedy against the disease.

But the crisis was reached when the secretary brought forward a sealed box said by the person who had sent it to contain the true germ of the cholera, which he termed the "choliferous mucus." Whether impelled by his own curiosity, or inspired with an admirable piece of tactics to secure his release from the irksome position in which he must have felt himself, the secretary was gravely proceeding to open the box when from all quarters of the house he was greeted with the cry, "Don't open it!" His hand was stayed, his scheme was thwarted, and this particular Pandora's box remained unopened. It remained an open question with the Academy what should be done with so dangerous a present.

A DANGEROUS SUCCESS.

In a recent issue of the "Medical Times and Gazette," Mr. Lawson Tait relates the case of a woman, thirty-two years of age, who presented herself at the Birmingham Hospital for Women, complaining of constant pelvic pain since her last confinement, much aggravated by her having "strained herself" six weeks before. The uterus was found somewhat fixed, and there was a cystic mass behind it very tender on pressure. Mr. Tait states that the physical signs were precisely those that would have led him to diagnose a pyosalpinx or hydrosalpinx, only it happened that the patient had not suffered much at menstruation. He therefore made no diagnosis, but advised abdominal section. The patient having consented, he opened the abdomen, and found "a good deal of matter in the pelvis, and

a coil of intestine adherent in the *cul-de-sac*." He "undid the adhesions without much difficulty, and closed the abdomen." On the twentieth day the woman left the hospital, and has had no trouble since.

Mr. Tait briefly reviews the points in the case, and speaks of the error into which he would have fallen if he had taken it for granted that the case was one of pyosalpinx or of hydro-salpinx, and acted as some advise—i. e., tapped from below. "I should have done no good," he says; "I should probably have made my patient worse; I might even have killed her. On the other hand, following my rule of opening the abdomen I was able, with very little difficulty, to cure completely a condition which distressed the patient, which put her in constant risk of her life, and for which no other remedy was possible."

Much as we admire Mr. Tait's achievements with laparotomy, it is difficult to avoid the feeling that the tendency of such statements and comments as we have quoted is to foster the view that the operation is indicated in the general run of cases of pelvic exudate with encysted fluid, provided it distresses the patient. Abdominal section, shorn though it has been of the greater part of its peril, and in great measure by the admirable work of Mr. Tait, does not seem to us to have yet become so innocent a procedure as to justify the inference which some will be apt to draw from the case in question. Looking at the matter from that point of view, it may well be questioned if the successful issue of the case is not fraught with danger.

MINOR PARAGRAPHS.

HYDROTHERAPEUTICS AT SARATOGA.

IN spite of the popularity of some of our American watering places, and the vague trustfulness with which patients with chronic ailments resort to them, it must be said that, in comparison with those of other countries, our resources in the shape of mineral springs have not hitherto been turned to account therapeutically in any way deserving to be called systematic or intelligent. It is undoubtedly true that in certain parts of Europe the powers of the mineral waters are magnified far beyond their real worth, and the indications for their therapeutical employment over-refined, but it is very certain that we have erred in the opposite direction. It is on all accounts to be desired that a systematic study should be made of those of our waters that have been conceded to have any just pretension to definite medicinal properties, and we are glad to learn, therefore, that one of the resident physicians of Saratoga, Dr. R. C. McEwen, is about to enter upon the study of the Hathorn spring somewhat after the manner of the bath physicians of Europe.

NEWS ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending August 5, 1884:

DISEASES.	Week ending July 29.		Week ending Aug. 5.	
	Cases.	Deaths.	Cases.	Deaths.
Typhus.....	0	0	1	1
Typhoid Fever.....	21	9	22	6
Scarlet Fever.....	50	9	37	5
Cerebro-spinal meningitis.....	5	5	3	3
Measles.....	129	27	84	20
Diphtheria.....	31	19	26	9

The Cholera has continued to abate in France during the week, and the prospect now seems to be fair that the decline will prove definitive. On the other hand, the disease has broken out, although in a very small way, in a number of Italian towns. The French Government, it is said, has demanded the discontinuance of the quarantine along the frontier, and threatens "reprisals" in case of a refusal.

Yellow Fever.—In consequence of the prevalence of this disease in the northern part of Mexico, it is stated, railway trains arriving at the frontier are to be inspected under the direction of the collector of customs at El Paso. Information received by the Surgeon-General of the Marine-Hospital Service from the State Board of Health of California, to the effect that a Spanish opera troupe had been allowed to pass Nogales, although there had been several deaths from yellow fever among the members of the troupe, led the Surgeon-General to direct a prompt investigation of the matter, and the dismissal of the inspector at Nogales in case it should appear that he had been negligent; but subsequent advices are to the purport that the troupe was detained, and that there was no occasion for the fear of the members spreading the disease.

The Lehigh Valley Medical Association will hold its fourth annual meeting at Mauch Chunk, Pa., on Tuesday, the 19th inst., instead of on Wednesday, the 20th, as had been announced. The annual address will be given by Dr. Theophilus Parvin, of Philadelphia.

The State Board of Health of Kentucky has issued a circular, signed by its president, Dr. Pinckney Thompson, and its secretary, Dr. J. N. McCormack, giving very sensible directions for the guidance of the people of the State in the matter of preventing the cholera.

The Connecticut State Board of Health reports, through its secretary, Dr. C. W. Chamberlain, of Hartford, a favorable condition of the public health for the month of June, although diphtheria still lingered in Hartford. The summer diarrheal diseases appeared early, but have not been very prevalent. We are indebted to the secretary for the copies of the board's "Instructions for Disinfection" and its "Suggestions concerning Cholera." Both these pamphlets contain advice and information which can not be laid before the community too often.

The "Canadian Practitioner" announces material changes in its editorial staff. Dr. Cameron and Dr. Nevitt retire, and their places are taken by Dr. J. E. Graham and Dr. W. H. B. Aikins, who, together with Dr. A. H. Wright, are to be the editors and proprietors.

A Novelty in Medical Journalism.—In its issue for July 26th the "Lancet" publishes an "annotation," entitled "Oleo-margarine," and credits it to itself.

M. Pasteur's Experiments on Hydrophobia, we learn from the "Union médicale," are to be continued on a portion of an estate set apart for the purpose by the French Government.

An Extraordinary Advertisement appears in one of the Fort Wayne, Ind., newspapers, setting forth the advantages of a certain "private sanitarium and lying-in institute." The proprietor's modesty and his elegance of diction are both conspicuous in the following passage: "My success in cases of confinement is unprecedented, and will attend to cases when called." The last item in the advertisement reads: "Money to loan."

The State Lunatic Asylum at Utica having been made the subject of a number of injurious allegations by one Louis A. Tourtellot, who failed to appear before the Board of Managers after having been served with a subpoena, the board has resolved

to apply to a judge of a court of record for a warrant directing the sheriff to compel him to attend. It looks, therefore, as if the charges made by Tourtellot were fanciful if not malicious.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from July 27, 1884, to August 2, 1884:*

HEAD, JOHN F., Colonel and Surgeon. Ordered to Portsmouth, N. H., to meet the Greely party, and consult upon the proper course of treatment, with a view to the entire restoration to health of Lieutenant Greely and the men of his command. Par. 14, S. O. 177, A. G. O., July 30, 1884.

WRIGHT, JOSEPH P., Major and Surgeon. Sick leave of absence extended three months on surgeon's certificate of disability. Par. 12, S. O. 176, A. G. O., July 29, 1884.

WOODWARD, JOSEPH J., Major and Surgeon. Sick leave of absence extended six months. Par. 9, S. O. 178, A. G. O., July 31, 1884.

McELDERY, HENRY, Captain and Assistant Surgeon. So much of Par. 12, S. O. 165, A. G. O., July 16, 1884, as assigned him to duty in Department of the East, is revoked, and he is ordered to report in person to the Surgeon-General of the Army for duty in connection with World's Industrial and Cotton Centennial Exposition at New Orleans, La. Par. 12, S. O. 178, A. G. O., July 25, 1884.

FINLEY, J. A., Captain and Assistant Surgeon. Granted leave of absence for one month, with permission to apply for one month's extension, to take effect about Sept. 1, 1884. Par. 2, S. O. 91, Headquarters Department of Texas, July 22, 1884.

TAYLOR, A. W., First Lieutenant and Assistant Surgeon. Ordered for temporary duty at Fort Riley, Kansas. Par. 1, S. O. 153, Headquarters Department of the Missouri, July 29, 1884.

GANDY, C. M., First Lieutenant and Assistant Surgeon. Granted leave of absence for one month, to commence between August 15th and 30th, provided he furnish medical attendance at Fort Brady, Michigan, during his absence. Par. 5, S. O. 154, Headquarters Department of the East, July 30, 1884.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the Navy during the week ending July 26, 1884:*

HARMON, G. E. H., Passed Assistant Surgeon. Ordered to temporary duty at Norfolk Navy Yard.

Society Meetings for the Coming Week:

TUESDAY, August 12th: Medical Societies of the Counties of Rensselaer and Ulster, N. Y.; Newark, N. J., Medical Association (private); Trenton, N. J., Medical Association (private).

WEDNESDAY, August 13th: Medical Society of the County of Cayuga, N. Y.

Proceedings of Societies.

NEW YORK OBSTETRICAL SOCIETY.

A STATED meeting was held March 18, 1884, W. M. POLK, M. D., President, in the chair.

Ovariectomy.—Dr. J. B. HUNTER narrated two cases of ovariectomy, in both of which the patients died. The first case was that of an unmarried woman, thirty-five years of age, who for nine months (and, she was certain, for not more than nine months) had suffered from pain in the pelvic region. A tumor was noticed in the right side for the first time last December. She came under Dr. Hunter's care March 1st. After a careful

examination he made a diagnosis of ovarian tumor, probably malignant. The patient was very much emaciated, and had the appearance of a woman suffering from a malignant disease. The tumor filled the whole abdominal cavity, and caused much pain by pressure. The patient's appearance was that of a woman of sixty-five. A consultation was held with two of his colleagues at the hospital, and they agreed that an operation was demanded, although the prognosis was unfavorable. There was some albumin in the urine. The operation was performed on the 10th of March. The usual abdominal incision was made. Some ascetic fluid was found, and a tumor of large size on the right side, extending up to the diaphragm and attached to the abdominal walls and the intestines. The contents were evacuated, and the adhesions separated without much difficulty or hemorrhage. The pedicle, which was short, was transfixed and tied. Another tumor, of about half the size of the first, was then found upon the left side, including the left ovary. Both tumors were multilocular. Within the left tumor were several papillomatous, cauliflower-like growths, projecting from the walls. A small portion of the left tumor could not be removed, as it was very firmly adherent to the pelvic fascia. The operation was not of long duration, but the patient's condition was very low; she had had a high temperature for some time before, and death took place ten hours after the operation. There had been but little hemorrhage. The specimens had been examined by Dr. Welch, who pronounced the growth malignant.

The other case was that of an unmarried woman, eighteen years of age, who for four years had noticed some abdominal enlargement, which had increased decidedly during the last year. She had been a patient of Dr. A. N. Brockway. For the last year there had been a constant dull pain in the pelvic region, and for six weeks past a severe pain, requiring morphine for its relief. The tumor was so tense as to be readily mistaken for a fibroid. The patient had menstruated regularly, but had a metrorrhagia, lasting a month, one year ago. Ether was given February 28th, as a satisfactory examination could not be made without it, in consequence of the pain it caused. The mass was central, and so hard that it was still considered doubtful whether it was uterine or ovarian. The depth of the uterus was two inches and a half. From that time until the date of operation, March 12th, the temperature varied from 100° to 104°, with nausea and vomiting, notwithstanding the use of the cold coil and quinine, and constant severe pain. The tumor increased in size, and the diagnosis of a suppurating ovarian cyst was then made. Dr. Thomas and Dr. Emmet agreed in the diagnosis and advised immediate operation. On making the usual abdominal incision a tense cyst was reached, which was so vascular and hard that it had the appearance of the uterus. A small puncture with Peaslee's needle was made, and a jet of extremely fetid pus escaped. None of the fluid was allowed to enter the abdominal cavity. The patient was turned on the side, and the cyst washed out thoroughly with carbolyzed water until the fluid returned clear. Then, on making an exploration, the cyst was found firmly adherent to the intestines, to the abdominal walls, and apparently to the uterus and other pelvic viscera. Very little investigation showed that it was impracticable to remove it. The abdominal wound was sewed up in the usual way, and the edges of the sac were stitched to the lower portion of the wound, so as to separate the cavity of the cyst entirely from the abdominal cavity. The operation lasted about an hour. There was but little hemorrhage. The patient rallied, but died early the following morning. The pulse before death was strong and rapid, and the temperature in the vagina rose to 107°.

The following report of the post-mortem examination had been furnished by Dr. W. H. Welch:

"Upon careful examination, it appears that the tumor is formed partly by a suppurating intra-ligamentous ovarian cystoma and partly by an intra-peritoneal abscess. The cystoma originates from the right ovary, which is therefore not to be discovered in the specimen. The left ovary is present, buried in adhesions. The inner surface of the posterior wall of the cyst is lined by cylindrical epithelium. In front, where the posterior surface of the uterus forms a part of the cyst-wall, there is no epithelial lining. The formation of the tumor may be explained as follows: There grew primarily a cystoma from the right ovary, between the layers of the right broad ligament. This cystoma consists of one large main cyst and several secondary cysts, which can still be made out, partly with purulent contents. Suppuration occurred in the main cyst, which resulted in a partial destruction of its walls, and the formation of an intra-peritoneal abscess, shut in by adhesions, but communicating with the main cyst. The adhesions encapsulating the intra-peritoneal abscess were so formed as to include the abdominal extremities of both Fallopian tubes, the mouths of which opened into the abscess cavity, and hence indirectly into the cystoma. The wall of the cystoma corresponding in its relations to the posterior wall of the uterus was entirely destroyed, so that here the uterine wall is also a part of the cyst-wall. The inner wall of the cystic tumor is therefore partly peritoneum and partly the mucous layer of a cystoma, but, except by microscopical examination, it is not easy to tell how much of the common cyst belongs to the cystoma and how much to the intra-peritoneal abscess. The ovarian origin of the tumor is proved by its multilocular character, by the lining with cylindrical epithelium, and by the absence of the right ovary. The intra-ligamentous mode of growth is proved by the peritoneal covering of the surface, and by the incorporation of the Fallopian tube and the round ligament in the cyst-wall. The partial formation of the cyst out of an intra-peritoneal encapsulated abscess is proved by the defect of the cystoma-wall in places and its replacement by peritoneum (posterior wall of uterus), and by the communication of both Fallopian tubes with the interior of the cyst, a communication difficult to explain upon any other supposition. Around the margins of the openings of the tubes into the cyst the fimbriae can still be made out, so that dilated tubes form no part of the cyst."

Had it been possible to make an examination two or three weeks earlier, the patient's life might probably have been prolonged by an operation. If, however, tapping had been resorted to as a means of diagnosis, the cyst being so tense, some of its putrid contents would doubtless have escaped into the abdominal cavity and caused fatal peritonitis.

Dr. J. E. JANVRIN asked of what the second patient really died; whether of shock, or of septicæmia which had existed for some time previous to the operation, as indicated by the persistent high temperature. He was rather of opinion that death took place from septicæmia, perhaps aided somewhat by the shock of the operation.

Dr. HUNTER agreed in this opinion, and said he thought that if the patient had been let alone she would certainly have died, within two or three days, of septicæmia.

The PRESIDENT asked Dr. Hunter, with regard to his first case, what he thought would have been the effect upon the ultimate result of the case of leaving the small, most firmly adherent portion of the cyst alluded to in the pelvic cavity.

Dr. HUNTER replied that it would in all probability simply have remained adherent without undergoing decomposition. He did not think it called for drainage.

The PRESIDENT said he had had a case which in many respects presented almost the identical features observed in Dr. Hunter's first case. A small portion of the sac had to be left.

The patient died on the sixth day after the operation, of shock, and the condition found at the post-mortem showed that the result would not have been changed if a drainage-tube had been introduced. The patient was older than Dr. Hunter's, being sixty-seven. This fact would probably render adhesive inflammation less likely to take place.

Dr. JANVRIN had assisted at an ovariectomy about a month ago which terminated fatally. The patient was unmarried, forty-five years of age. He saw her only the day before the operation. The physician and patient stated that the abdominal tumor had been present only six months. The tumor, however, was of immense proportions, and the patient was extremely emaciated and weak. Dr. Janvrin found evidence of more or less adhesions and a large firm mass in the right *cul-de-sac* which was thought to be a portion of the ovarian tumor above. It was firmly impacted, it being impossible to dislodge or move it. The uterus was normal, and lay a little to the left and anteriorly. The operation was done at St. Elizabeth's Hospital. At first an incision about two inches and a half in length was made, and the tumor found apparently to be uniformly adherent. In trying to separate the adhesions of the sac from the abdominal parietes the cyst was very slightly torn and a hole made of the size of a pin's head into its cavity. Dr. Janvrin then advised immediate tapping, which was done with a large trocar and cannula. The contents were found to be colloid in character. The adhesions were so extensive that the incision was necessarily extended nearly up to the umbilicus. A great deal of difficulty was experienced in fully detaching the cyst from the parietes, principally on account of its soft and friable state. Finally it was thoroughly removed. Unavoidably some of the colloid material entered the peritoneal cavity. The entire cavity was thoroughly washed out with hot water slightly carbolicized. The tumor grew from the right ovary, and, in extracting it, a small rent was made in the broad ligament from which a little hæmorrhage took place. It was controlled by two ligatures. The cavity having been washed out, as before stated, and being perfectly clean, the incision was closed. The operation consumed forty-five minutes. During the operation the pulse disappeared and the patient seemed to be dying. Ten or twelve hypodermic injections of brandy were given, the feet were elevated, and, as the legs were extremely œdematous, rubber bandages were sent for, with which they were wrapped, forcing the blood and serum into the body. The pulse almost immediately became perceptible, and the patient was put to bed. Reaction took place in about three hours. The drainage-tube was left in. At the end of forty-eight hours it became evident that there was more or less serum in the abdominal cavity, as indicated by septic symptoms. The dressings were raised and a pint of serum was withdrawn. The patient lived nine days, and finally died, apparently of exhaustion, all symptoms of septic poisoning having disappeared about the fourth day. There was no further accumulation of serum. The points of interest in the case were, the immense size of the tumor, its colloid character, the extreme feebleness and almost moribund condition of the patient during the operation, and the very favorable effect which applying elastic bandages to the extremities had by forcing the serum back into the general circulation, answering almost the same purpose as transfusion, which had been suggested during the operation.

The PRESIDENT asked Dr. Janvrin whether he thought, in view of the extensive adhesions, the operation should have been done. He made the inquiry because he himself had been placed in a similar position, and he would like to know the opinion of others.

Dr. JANVRIN replied that he had seen many cases in which the adhesions were as extensive, and yet the operation proved

successful. In this case the patient was sinking very rapidly, and an operation offered the only chance of recovery; it was for that reason that he advised the doctor to remove the tumor as soon as possible.

The PRESIDENT remarked that, where the adhesions were extensive and firm, one could not tell beforehand how long a time the operation would require, how much handling would be necessary, nor the possible amount of the hemorrhage, and the patient's chances were consequently likely to be greatly diminished.

Dr. HUNTER mentioned a case in which the adhesions were very extensive in every direction, and the patient recovered; and another of a similar nature, operated upon by Dr. Thomas, in which the adhesions extended to the diaphragm. The patient surprised everybody by making a good recovery.

The PRESIDENT remarked that in his experience with such cases the adhesions had been principally in the pelvic cavity, but, if they occurred higher up, and even on the diaphragm, they were less vascular, the operation was not so bloody, and occasioned less shock. Their extent, their vascularity, and the great length of time required for their separation within the pelvic cavity, and the attendant shock, made it questionable whether firm adhesions should be interfered with in this locality, especially if they were extensive.

Dr. JANVRIN thought that in such a case the upper portion of the sac might be removed and the lower part, where it was most firmly adherent, be allowed to remain and drainage be established. He had done this in several cases.

Dr. P. F. MUNDÉ had operated upon a patient a little more than a year ago in whom two tumors were present—one high in the abdominal cavity and the other firmly adherent to the entire pelvic cavity. No particular difficulty was experienced in removing the first tumor, except that the care with which it had to be stripped from its extensive attachments required considerable time. The second tumor was of about the size of a large cocoa-nut, had apparently developed within the broad ligament, and had to be seared off with Paquelin's cautery from the posterior surface of the uterus down to the *cul-de-sac*. No pedicle was left. Some large arterial twigs in the seared surface were tied by deep sutures. The abdominal wound was closed and a drainage-tube inserted. Dr. Mundé had since concluded that he had closed the wound too soon; he should have waited until it was certain that every bleeding point was permanently secured, for the patient was in good condition, although the operation had lasted an hour and a half. She rallied well, with scarcely any shock. But a good deal of bloody serum escaped through the drainage-tube, and, after twenty-four hours, her condition suddenly changed, the pulse went up to 150, and symptoms of collapse appeared. In spite of all efforts at restoration, she died the next morning. A post-mortem was not allowed, but Dr. Mundé was of the impression that secondary hemorrhage had taken place, and that in similar cases it was better to prolong the operation and take the chances of shock, in order to make sure that all bleeding was permanently arrested.

The PRESIDENT said the question which had been in his mind was whether it was good practice to persist and break up all the adhesions where they were very extensive. It seemed to him, from the discussion which had taken place, that the method suggested by Dr. Janvrin was the proper one to pursue—namely, to remove the upper portion of the sac, if possible, and leave the portion firmly adherent within the pelvis and wash it out. He had observed the plan suggested by Dr. Mundé of persisting in removing all the sac down in the pelvis and waiting until all oozing had ceased in two cases, and he lost both of the patients from secondary shock. Not a teaspoonful of serum had exuded

in either case. He believed that both patients would have been saved had he been less anxious to get away all the stump.

Dr. MUNDÉ had operated upon a patient a year and a half ago, in which case the sac was so broken down that it had to be removed piecemeal. The patient died of shock. He therefore thought the suggestion which had been made, to leave a portion of the firmly adherent sac and establish drainage, a good one, as subjecting the patient to a less degree of shock. He had observed this plan in one case, and the patient recovered.

With regard to Dr. Janvrin's second case, Dr. F. P. FOSTER asked whether the immediate beneficial effect of the application of the rubber bandage was not due rather to forcing the blood than the serum from the extremities directly into the general circulation.

Dr. A. JACOBI said that, while the serum could not be forced directly from the tissues in which it was found into the general circulation, it required but a short time for it to reach it indirectly, under pressure, for the lymph-ducts terminated in the subcutaneous tissue with open orifices; and, although it might have swelled the volume but slightly, it was known, from the results of transfusion of salt water, that a few ounces would have the effect of restoring the patient. The fact that the oedematous limbs were found to be reduced to their normal size after removal of the bandages showed that the serum must have gone to the circulation within the body. He thought, therefore, that some of the effects were due to the return of the serum as well as of the blood to the general circulation.

The Relation of Over-nutrition after the Acute Fevers of Childhood to Bone Disease.—Dr. JACOBI said he would refer to a class of cases which were not very uncommon, and which were interesting because of their connection with a number of physiological and pathological questions. A very simple and illustrative case was the following:

Some time ago a girl, eleven or twelve years of age, was present at his clinic for a swollen right humerus at its lower portion. The swelling was very slightly painful. There was a cicatrix about the middle of the arm, which had formed about six months before, after a sinus had lasted six years. A fistula opened an inch and a half above the elbow, on the anterior aspect, which led down to about the middle portion of the epiphysis, apparently extending to the periosteum only. It was stated that the humerus began to swell when the child was four years old, and very soon after she had gone through a severe attack of typhoid fever. The question arose, Had this swelling of the bone and periosteum anything to do with the typhoid fever? Dr. Jacobi thought it had, for reasons which he would state. While he might not be able to say anything that was not known to every person present, still the case was of interest in connection with a number of others which he had seen, and which were very interesting to him, particularly so because they opened up the question of the cause of quite a large number of cases of a similar description. There was one peculiar fact in the development and growth of children, which was known to physicians and also to the laity, that children not only appeared very tall after having gone through a severe illness, and particularly through a severe infectious disease, but they were really taller than before the sickness, and they grew very rapidly for a short time during and after such infectious disease. The growth or tallness was not only apparent, from the patient having become thin, but by measurement it could be shown that they actually were taller. The body became taller by an elongation of the bones; the bones grew by a rapid proliferation about the cartilage which separated the epiphysis from the shaft. If the bone grew, it must be in consequence of a nutritive process, which might become an irritative process, in that neighborhood. And the question arose whether high fevers,

and infectious fevers particularly, had not the effect of producing such irritative disorder as proved under certain circumstances a cause of increased nutrition. Observation showed that after all cases of infectious disease in particular the epiphyses and the adjoining cartilages were very hyperæmic. In such localities, if a post-mortem examination were made, the blood would be found to ooze out, and where there was much blood there was at least an opportunity for over-nutrition. In rachitical bones we knew that the intense growth and thickness were due to such over-nutrition. Thus it was that after most infectious fevers not only the epiphyses were apt to grow thicker, but also the diaphyses to grow longer, in consequence of the nutritive irritation of the cartilage (and periosteum). In cases in which the nutritive disorder, the hyperæmia, was not limited to its physiological condition, where it was a little more than physiological, it became pathological. In most cases the over-nutrition and growth ceased after a while and returned to the normal state, but in others they were carried to such an extent as to become pathological and cause necrosis. Such over-nutrition of the epiphyses was one of the forms of so-called "growing-pain." Growing-pains occurred very frequently after a severe illness, and especially after a severe attack of an infectious fever, and were due to hyperæmia which might amount to inflammation. The other forms of "growing-pain" were either rheumatic or neuralgic in character.

The PRESIDENT understood Dr. Jacobi to mean that the necrosis occurred in these cases merely in consequence of over-nutrition, which became pathological, and in the absence of syphilis or inherited tendency. He would ask how the fact was to be explained that in rachitical children this condition rarely occurred.

Dr. JACOBI replied that the character of the disease changed with the exciting cause. The syphilitic bone, for instance, differed from the scrofulous bone, and again from the rachitical bone. The influence referred to as springing from infectious diseases and the rachitic tendency were rarely combined in producing their effects upon the epiphyseal cartilages, for the infectious diseases usually occurred at an age when the rachitic disease had already healed and the bones had become eburnated, preventing such elongation.

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Reports on the Progress of Medicine.

GYNÆCOLOGY.

By ANDREW F. CURRIER, M.D.

The Mechanical Treatment of Amenorrhœa.—The fact is, as Dr. J. H. Carstens remarks ("Am. Jour. of Obstet.," Nov., 1883), that amenorrhœa is only a symptom, and all scientific treatment of it will have its cause in view. Sometimes this is hard to find, and the experimental use of the various emmenagogues may end in failure. The author is an advocate of rapid dilatation, for the purpose of recalling or of increasing the menstrual flow, and uses for that purpose the two-bladed dilator of Nott. The operation, he says, is harmless, but he admits that it is painful. He has never seen any bad results from its use. [We can not forbear to remark that this procedure is not always quite innocent in hands less experienced than the author's, and too great caution, we believe, can not be exercised in its prac-

tice, not only by the inexperienced and inexpert, but also by those whose experience is mature.]

Non-puerperal Pelvic Lymphadenitis and Lymphangitis.—Dr. Paul F. Mondé (*Ibid.*, Oct., 1883) contributes a very interesting and a very suggestive paper on a subject which has hitherto been overlooked by gynæcologists amid the uncertainty and vexatiousness of the investigations concerning pelvic peritonitis and cellulitis. The author assumes that poisonous or inflammatory influences may be as surely transmitted from the uterus or vagina to the system at large, by way of the lymphatics, in the non-pregnant as well as in the pregnant woman, although the conditions for accomplishing this end are, of course, more favorable in the latter than in the former. Upon this assumption he founds the existence of the diseases in question, one of the prominent phenomena of which is swelling of the uterine lymphatic vessels and glands. Vaginal exploration in conditions like those in question have revealed to the author an exceedingly tender, hot, and puffy parametrium, without any distinct plastic effusion or general elevation of temperature. The uterus is swollen but movable, and motion causes pain. The ovaries are swollen and tender. In some cases, also, there are small indurations on either the anterior or posterior surface of the uterus. Backed by Courty and Carreau, the author feels justified in the conclusion that the condition before mentioned is evidence of the diseases referred to, and he details six cases in which he was positive that his diagnosis was correct. He refers to the anatomical investigations by Championnière and Leopold, who have so brilliantly demonstrated the lymphatic system of the female pelvic organs, and with commendable frankness publishes a personal communication from Leopold, in which that gentleman questions the possibility of feeling non-inflamed, merely distended lymphatic vessels through the vaginal roof. The conclusions of the author are: 1. That an inflammation of the pelvic lymphatic glands and vessels occurs in the non-puerperal state more frequently than is commonly supposed. 2. That this affection stimulates chronic pelvic peritonitis. 3. That these inflamed lymphatics (in spite of what Leopold says) can be felt through the vaginal roof. 4. That the affection may or may not depend upon uterine disease. 5. That its treatment resembles that for chronic pelvic inflammation, the primary focus of irritation being first removed.

The Advantage of Drainage in Suppurative Pelvic Peritonitis and Cellulitis.—Dr. A. Y. P. Garnett (*Ibid.*) agrees with Dr. Emmet as to the supreme importance of these morbid conditions, and gives in detail the history of a case which furnished the phenomena so familiar to every one who has studied these conditions. The case was peculiar in the existence of deep sinuses, which opened externally upon the abdominal surface, one opening being in the linea alba, one inch below the umbilicus, and the other four inches to the right and below the first, in the right iliac region. Drainage was effected by making a counter-opening in the vagina, a blunt-pointed probe being carried from the abdominal opening through the *cul-de-sac* of Douglas, and thence into the posterior fornix vagina. The lower opening was sufficiently enlarged to admit of the passage of a drainage-tube, which protruded from the vulva. Irrigation was practiced from time to time, and after five weeks the drainage-tube was removed. In three weeks more all the sinuses were closed. The patient eventually recovered entirely. The author lays down the broad rule for all cases of suppurative cysts of the broad ligaments, or elsewhere in the pelvic cavity, in case abdominal section is not decided upon, to puncture through the vagina and introduce a drainage-tube.

The Differential Diagnosis of the various Forms of Fibroid Tumors of the Uterus.—Dr. Alfred Meadows, addressing the British Medical Association ("Brit. Med. Jour.," Oct.

13, 1883), observed, as to the progress of knowledge in this direction, that it could now be decided with considerable precision when, and in what cases, interference was justifiable; and whether this interference should consist in extirpation of the tumor, or in what he called physiological starvation—that is, the removal of the ovaries and the stoppage of the blood-supply to the tumor. He objects to the proposition of Lawson Tait, that uterine fibromata should be classified according to their individual character, without reference to their relation to the uterine walls. Clinical experience, he thinks, will sustain the old classification, in preference to the one proposed by Tait, which lacks clinical precision, and is only of post-mortem interest. The rate of growth and the situation of these tumors seem to have a bearing upon their character, those which are interstitial or submucous and of rapid development abounding in cellular elements, while the subperitoneal are more fibrous in character. Of the three groups, under the old and (by the author) approved classification, those of the interstitial variety grow most rapidly, and hence are largely composed of cellular elements. All the varieties are much more commonly developed from the fundus and body of the uterus than from the cervix, and more frequently from the anterior than from the posterior wall. The symptoms are classified under three heads: 1. Disordered menstruation; 2, irregular discharges of mucus or of blood; 3, pain. The difference in degree of these symptoms affords valuable indication as to the site and character of the growth. The two chief symptoms, in the author's experience, bear an inverse ratio to each other—the greater the one, the less the other. He has also observed that, if the tumor gives rise to great pain, it will usually be found to have developed on the peritoneal side of the uterus, while, if the discharge is great, the mucous side is usually concerned. The interstitial growths are akin to the submucous in the matter of discharge, though this is not usually so abundant. When a submucous tumor projects into the vagina, a sloughing process is often instituted, and under such circumstances the condition may be mistaken for cancer, though careful examination will reveal the ring of sound cervical tissue through which the tumor is protruding. If the growth is subperitoneal, the pain from it will be more severe if it is located on the anterior than if on the posterior wall, and the same condition obtains the nearer the growth is to the fundus. The pain is caused by interference with more or fewer of the branches of both the sympathetic and the cerebro-spinal nervous systems, and there is nothing peculiar in its character. When a vaginal examination is made, a hard and insensitive condition of the cervix renders the presence of a subperitoneal fibroid probable. If the condition is simply that of flexion of the uterus, both the body and the cervix will manifest the ordinary softness and tenderness of those parts. By using the sound, a tumor can be accurately differentiated from flexion of the uterus by means of the two factors, viz.: the direction which the sound takes, and its motion or lack of motion as uterus or tumor is touched. In the differential diagnosis between ovarian and fibroid tumors, when both are small, the pain in the former is unilateral, in the latter it is central. The ovarian is also softer and more elastic than the fibroid tumor. If the growth is a large one, the submucous variety necessarily causes elongation of the uterine cavity, as indicated by the sound. In other varieties the canal may not be lengthened, but external movement of the tumor will be readily communicated to the sound. The history of ovarian tumors is usually well marked and distinct from that of fibroids. In the latter, if they are large, there is almost always a more or less abundant discharge, which the former lack. The latter usually have a long history, often without much constitutional disturbance; the former grow more rapidly, usually produce constitutional dis-

turbance, and especially a decided emaciation. These and other well-established points render the diagnosis of fibroid tumors of the uterus to a great degree a matter of precision.

The Operative Treatment of Fibro-myomata of the Uterus.—Mr. J. Knowsley Thornton (*Ibid.*) states that he proposes in this paper to place before the members of the British Medical Association (before whom the discussion took place) his experience in this matter and the views which have been founded upon it. He wisely remarks that he strongly objects to operative interference in ordinary cases. The classification which he adopts is the old-time one, which he thinks is both more correct and more useful than any other—viz.: 1, subperitoneal; 2, intramural; 3, submucous. Each of these varieties, with its concurrent conditions, is described. In removing tumors of the first class when pediculated, his plan is first to secure the pedicle by a ligature, which is tied around it. Then to thread an end of this same ligature through a needle, transfix the pedicle on the distal side of the first ligature, and subsequently tie in halves, or in smaller pieces, as may seem advisable. Hæmorrhage is effectually prevented, whether from slipping of a ligature or from a previous puncture of the pedicle. Sessile growths of this variety will justify operation when hæmorrhage, pain, and inconvenience from size and pressure are so annoying as to menace the person's life. The author has operated in three such cases. He includes fibro-cysts of the uterus in the same classification with ovarian tumors, and hence does not refer to them at length in this place. Under the second heading he remarks upon the serious and dangerous character of an operation for the removal of an intra-mural fibro-myoma involving, as they nearly always do, the opening of the uterine cavity. He thinks such an operation should never be done unless there is so much positive danger to the patient's life from the presence of the growth that it becomes imperative. Whenever the operation is done, the uterine cavity having been opened, all the cut surfaces should be brought outside of the peritonæum. He mentions as the two methods of accomplishing the latter end—first, the method by suture, in which the raw surfaces are turned into the uterine or cervical cavity; second, the method with the clamp or the *serre-naud*, in which the raw surfaces are brought out. He approves of the use of the *serre-naud* as the safer and better plan. Complete hysterectomy, he thinks, is safer and easier than partial hysterectomy. He refers to twelve cases of complete supra-vaginal hysterectomy in which he operated, removing the ovaries also in each case. Seven of the patients recovered and five died. Extra-peritoneal treatment has given the better results. Of the removal of the uterine appendages in the treatment of these growths he speaks in terms of the highest approbation. He has operated fifteen times without losing a patient, and in ten cases the tumors and menstruation have entirely disappeared. The other cases also promise well. His directions for removing these appendages are that the ligatures should be so applied as to completely cut off from the tumor the blood-supply from the enlarged ovarian, tubal, and other vessels. His opinion is that hysterectomy should be reserved for those cases which have passed beyond the period in which the uterine appendages can be removed. Hence the operation will have only a limited field.

Myomotomy.—Professor Schröder (*Ibid.*) also read a paper before the recent meeting of the British Medical Association. He remarks that the important points to be observed in the removal of large solid tumors of the uterus by laparotomy were: 1. A method of operating without great loss of blood. 2. A method of forming a good pedicle without danger from hæmorrhage. He considers that he has achieved these ends in the plan which he adopts and recommends. In cases of subserous myomata with narrow pedicles the treatment of the pedicle is

essentially the same as in ovariectomy, and the prognosis is equally good. If a subserous or interstitial fibroid of the fundus uteri extending upward is to be extirpated, the author recommends the following plan: A thin, solid India-rubber ligature is to be placed around the body of the uterus, after which the capsule may be incised and the tumor enucleated; or it may be removed by means of a V-incision at its base. As to the stump, the two surfaces may be stitched together, after being trimmed for that purpose, should it be necessary. Several rows of stitches unite the parts, the first row bringing the deepest parts together, and successive rows, as frequent as is required, being passed above this, until the last row unites the edges of the divided peritonæum. Only the sutures of the last row are visible, the others being cut short after they are passed. If the tumors are developed along the side of the body of the uterus, the difficulty in removing them is greater, but Schröder considers it best to save as much of the uterus and its appendages as possible. There being no pedicle to the tumor, it is necessary to make one out of the uterus. With suitable precautions, the ligaments on both sides are divided, the India-rubber ligature is placed around the uterus near the base of the tumor and the latter is then carefully cut away above the ligature. The surfaces of the stump are then brought together and covered with peritonæum in the manner which has been already described. In cases in which the tumor has developed at the lower part of the uterus, and has even extended into the cellular tissue of the pelvis, the difficulties are very great. The author treats the appendages as in the case last described, and then enucleates the tumor out of the pelvic cellular tissue. As to the cavity which remains, it is left alone in some cases; in others a drainage-tube is passed from it into the vagina, the wound toward the abdominal cavity being closed by bringing the incised edges of the peritonæum together. The indications for these operations are of a different nature from those which obtain in ovariectomy, and they should be urgent before an attempt is made to remove the tumor. The methods of operating will yet admit of improvement, and the author hopes that the time will come when the prognosis will not be much inferior to that which has been reached in ovariectomy. Schröder has operated on sixty-six patients with this kind of tumor; twenty of them have died, but of his last forty he has lost only nine, the improvement being due to the use of the India-rubber ligature, the method of suturing, and the plan of enucleation.

The Enucleation of Myomata.—Dr. R. Lomer ("Zeitschr. f. Geburtsh. u. Gynäkol.," ix, 2, 1883) observes that Schröder's success in myomectomy has rendered it desirable to compare the advantages of that operation by laparotomy with the method of enucleation *by the vagina*, and to fix the limits for the propriety and the desirability of each. The author thinks that myomectomy—that is, by laparotomy—will be much more extensively practiced in the future, as methods become tried and perfected. He lays great stress upon the extraordinary dangers which are sometimes encountered in the dilatation of the cervix, which may require repeated performance in those cases in which the tumor is removed *per vaginam*. The dilatation exposes the cervical mucous membrane to destructive changes which are apt to follow the hyperemia and ulceration to which it has been subjected, and is also very apt to be followed by fever. Enucleation by the vagina is, of course, useful in some cases, and was a last resort before the days of myomectomy. The prognosis in this latter operation, though it may have involved the opening of the uterine cavity from the peritoneal side, is not more unfavorable than obtains in complicated ovariectomy.

There are two classes of tumors which he thinks should be removed *per vaginam*: 1. Myomata of the cervix and the lips of the os. 2. Sub-mucous and intramural myomata which are

readily accessible from the vagina. If the cervix requires dilatation, especially if it is rather a long one, he does not favor enucleation by the vagina. He quotes Czerny, who advocates what he calls vaginal myomectomy for subserous myomata of the cervix and fibromata of the pelvic connective tissue. This operation may require an opening into the abdominal cavity through the vagina. A table of cases is added in which he gives the statistics of the vaginal operation as it has been performed in the last ten years.

Supra-vaginal Hysterectomy.—Dr. Keith ("Brit. Med. Jour.," Dec. 8, 1883) says that, since an ordinary uterine fibroid tumor has a limited life, it becomes a very important question to how far interference with its life is justifiable. The best results of the most skillful operators show a very high mortality, and Dr. Keith says he can not accept such a death-rate. Unless better results can be achieved, hysterectomy should be laid aside. He thinks that we still know little that is definite in regard to uterine fibroid tumors. There is great need of the details of a large number of operations, especially in cases which have been fatal. Dr. Keith removed his first fibroid tumor ten years ago, having erroneously diagnosed the condition as one of ovarian tumor. Two more were operated upon the following year, the condition being recognized in both cases, and the operations being done at the earnest solicitation of the patients on account of severe hemorrhage. Then a period of three years elapsed before any more operations were done. In all, Dr. Keith has operated twenty-five times, with only two deaths. Though he has discarded the spray, he makes this significant remark: "He is insane who does not now accept, *toto animo*, the antiseptic principle in surgery." The extra-peritoneal plan of treating the pedicle was adopted in most cases. The broad ligaments were sometimes returned into the cavity, and sometimes secured outside. The bladder was in several cases very large, sometimes rising as high as the umbilicus. The value of his advice to have the bladder full when undertaking an operation of this sort can be readily appreciated. In five of the cases the attempt was made to remove the ovaries, but it was found to be impossible. In all the cases in which recovery took place the health has been perfect ever since the operation. On account of the long period of convalescence when the extra-peritoneal plan of treatment is adopted, if for no other reason, he thinks the intra-peritoneal method should be perfected. Great success in performing hysterectomy must rest largely, as Schröder has said, upon the development of methods of operating. The author is not sure that the operation can be heartily advised unless we can get the mortality down to five per cent. in the bad cases.

Vaginal Hysterectomy for Cancer.—Professor Schröder's opening proposition in this paper (*Ibid.*, Sept. 15, 1883) was that the operative removal of cancer of the uterus was always indicated when it was believed that all the diseased tissues could be removed and no severe constitutional disease was present. In making an examination to decide as to the propriety of operative measures, the patient should be anesthetized, and in the dorsal position, and the examination be made very thoroughly by the bimanual method. It is very important, in deciding upon a case, to know how far the disease has extended along the mucous membrane of the uterine canal, and it is a fortunate fact that in the most common variety of cancer, the cauliflower excrescence, it is attacked late in the history of the disease. The order of development of the morbid process is, first, in the mucous membrane of the vagina; second, in the pelvic cellular tissue; third, in the tissue of the cervix; and, finally, in the cervical mucous membrane. The second form of cancer is less common than the one which has been described, and is the encephaloid. It ulcerates first in the interior of the cervix and cor-

pus, working outward in the reverse order of the cancrioid (cauliflower excrescence). Between these two forms is the scirrhus, or primary, cancer of the wall of the cervix. This form involves the body of the uterus and the pelvic cellular tissue at an early period, and last of all the cervical mucous membrane. Another and fourth form is that which first attacks the mucous membrane of the body of the uterus, and thence extends to the cervix. In operating for any of these varieties it may be necessary to remove, also, more or less of the vagina, but the expediency of such a procedure should first be fairly weighed. Cancroid of the cervix may be radically removed, also cancer of the wall of the cervix, always presupposing favorable conditions. If the mucous membrane of the cervix or of the body is invaded, the entire organ must be removed. In amputating the cervix, or performing what Schröder calls the supra-vaginal amputation, the cervix is divided on each side as high as the vaginal junction, being well drawn forward by a volsella in each lip. The vaginal mucous membrane is then divided by a circular incision at least one centimetre beyond the diseased tissue. The anterior lip is then cut off with scissors, care being taken to avoid the bladder, and also to cut into healthy tissue. The same procedure is adapted with the posterior lip. If arteries are divided, the bleeding is stopped by passing sutures around them. Deep sutures are passed to unite the vagina with the cervical mucous membrane, and thus cover the stump. Finally, the edges of the divided vaginal mucous membrane are brought together. If the entire uterus is to be removed, the first steps are the same as those in the operation already described, including the circular incision in the vaginal mucous membrane. Douglas's pouch is then opened by a transverse incision, the uterus tilted backward and pulled through the opening. This is followed by division of the peritonæum at the bottom of the vesico-uterine pouch, and this by ligation of the broad ligaments, either *en masse* or in two or three separate parts. The uterus is then cut away, and the ends of the broad ligaments are brought into the peritoneal wound, which is carefully closed with sutures. A drainage-tube also leads into the vagina, and around it is packed a tampon of salicylated cotton. The sutures are allowed to remain two weeks. In case the uterus is very large or the vagina narrow, it will be necessary to perform laparotomy, in which case Freund's operation, or some modification of it, must be done. Schröder has lost seven of the twenty-three patients upon whom he has performed this operation. With the supra-vaginal amputation he has lost eight out of sixty-four. He thinks the prognosis in these operations will improve as the methods are perfected, and that if only one in twenty is radically cured the result should be considered good, and a consolation for many unsuccessful cases.

An interesting discussion followed the reading of this paper, which was participated in by Sir Spencer Wells, Mr. Rogers, and Mr. Thornton. Mr. Wells read a letter from Olshausen, in which he spoke of a modification in the operation for removal of the uterus, which consisted in deterring the ligation of the broad ligaments until late in the operation, and then applying elastic ligatures by means of a bent aneurysm-needle. A long stump, with plenty of cellular tissue, was thought to be desirable to prevent retraction and slipping of the ligatures. During the operation the parts should be irrigated with a two-per-cent. solution of carbolic acid, and after the removal of the uterus the pouch of Douglas should be washed out with a four-per-cent. solution of boric acid. A drainage-tube should be passed through the peritoneal wound into the vagina, the edges of the divided peritonæum be brought together with sutures, and the vagina tamponed loosely with iodoform gauze. The gauze and drainage-tube should be removed between the fourth and the eighth days, and the elastic ligatures after two or three weeks.

Of the twenty-eight cases in which Olshausen had attempted the operation, three were incomplete; of the others, seven proved fatal, and in several others there had been a recurrence of the disease. Rogers, of London, remarked that he had not yet lost all hope of success in the operation for extirpation of the cancerous uterus. As to partial removal of the organ, he had had good success, especially when he followed up the cutting operation with applications of chloride of zinc and bromine. Thornton expressed great disappointment at the results which had been achieved by Schröder and Olshausen, and did not believe in the hopefulness of the operation which required extirpation of the entire uterus. He thought that both the vaginal and the abdominal operations would soon drop out of surgical practice.

The Palliative Treatment of Cancer of the Uterus.—Dr. J. E. Burton (*Ibid.*) thinks that we are too apt to be discouraged in treating this disease, and to make no attempt to do anything when the disease is in an advanced stage. Four measures can always be taken, with more or less success: 1. We can attempt to bring about a more healthy action in the parts. 2. We can relieve pain. 3. We can moderate discharges, especially those of blood. 4. We can remove the factor of the discharges. He suggests that the progress of a neoplasm may be checked, at least for a time, by exciting an inflammation which shall affect its immediate surroundings. Such a cordon of inflammation might be excited by the action of iodine or iodized phenol. He quotes Duplony as considering that concentrated acetic acid is the most satisfactory substance for such a purpose. Gallard is much in favor of the actual cautery, which he thinks might be used freely as often as once in three weeks. Of other caustic agents, nitric acid, acid nitrate of mercury, bromine, sulphuric acid, bichromate of potassium, nitrate of lead, chlorate of potassium, and resorcin, all have been used by the author and are of benefit in certain cases. Before caustics are applied to an exuberantly granulating surface, the granulations should be scraped away as thoroughly as possible. For the relief of pain nothing better than opium, in some form, by the rectum, can be given. To diminish the vaginal discharge, any reliable astringent injection may be used. Subcutaneous injections of ergotin will have a good effect in controlling hæmorrhage. The factor which is so offensive can be controlled by vaginal suppositories of iodoform, used night and morning. The author has also found that Chian turpentine lessens the quantity of the discharges and the tendency to hæmorrhage—hence it is not valueless. He thinks a spare diet is to be preferred when it is possible. In the discussion, several well-authenticated cases of cure of uterine cancer were related.

Cancer of the Neck of the Uterus and its Treatment.—Dr. A. Wynn Williams (*Ibid.*) stated that he thought the difference, if any, between epithelioma and medullary tumor of the neck of the uterus depended solely upon the texture from which each originated, the medullary growth starting from the interior, the epithelioma, or cauliflower growth, from the exterior of the cervix. He would lay stress upon the premonitory subjective symptoms of cancerous disease—viz., continuous pains in the back, extending down the thighs, especially the left one, irregular and profuse uterine discharges, watery, sanious discharges from the vagina, etc. Then the patient should be carefully examined and closely watched. If the mucous membrane of the vagina had not yet been invaded, and the other neighboring structures (glands and cellular tissue) were still free, the diseased organ might be taken away, the sooner the better. If the disease is epitheliomatous, the author prefers the *écraseur* for removing it, and goes as near Douglas's pouch as possible. The operation is performed with the patient in the dorsal position. Bleeding points are touched with the cautery, and the same in-

strument may be useful in destroying diseased surfaces which were not reached by the *éraseur*. It is also applied to the entire surface of the wound, after which the vagina is tamponed with cotton, of which the portion next the wounded surface is treated with a solution of perchloride of iron in glycerin; and finally a T-bandage is adjusted. After two days the tampon is removed, and the vagina is syringed out four times daily with a weak solution of iodine in water until the slough produced by the cautery has come away. Next a plug of cotton, which has been dipped in a solution consisting of one part of bromine and three of spirit of wine, is carefully applied to the raw surface, the surrounding tissues being protected by cotton which has been soaked in solution of bicarbonate of sodium. The slough produced by this application comes away in a week or ten days, and the operation is to be repeated if any evidences of the disease remain. If the disease is of the medullary character, its true nature may be overlooked until ulceration involving a large portion of the cervix has occurred. Of course, the cervix should be amputated as soon and as thoroughly as possible (supposing always that the surrounding tissues are not too much involved), and the bromine applications used, as already described. The scirrhus form of cancer is not common in the cervix uteri. When it does occur, the author's recommendation is to amputate the cervix or to inject bromine into it. The treatment following amputation should be the same as in the two other varieties.

The Diagnosis and Treatment of Subperitoneal Cysts of the Ovary.—Dr. T. A. McGraw ("Am. Jour. of Obstet.," Oct., 1883) remarks that the literature of this subject is very meager, consisting mostly of reports of isolated cases. Such a case occurred in his experience in the person of a primiparous widow twenty-four years of age. He was called to see her during menstruation, and found symptoms of an attack of acute peritonitis. There was also a tumor, of an elastic character, in the lower part of the pelvis, which could be clearly outlined. It had been developing for a year, and was apparently firmly adherent to the pelvis. A short time previous to the operation which was determined upon the tumor was tapped, and inflammation followed. At the operation the cyst was found covered entirely with peritonæum. There were many strong adhesions, some of which extended to the rectum. In separating the latter, the rectum was wounded, but the wound was carefully closed. The patient lived only twenty-four hours after the operation, and there was no autopsy. Examination of the specimen showed that the cyst was entirely subperitoneal, having developed from an ovary between the layers of the broad ligament. As to the literature of this condition, Freund and Beigel consider that these growths follow faulty development of the ovary. Olshausen also has seen several interesting cases, and he is opposed to operation when such a condition can be clearly diagnosed. The peculiar difficulties which one is liable to meet with, and which require special treatment in case of operative interference, convince the author that intra-ligamentous tumors should be classed by themselves, and be treated according to the conditions which they present.

Miscellany.

THERAPEUTICAL NOTES.

Static Electricity as a Preventive of Cholera.—In a recent number of the "Progrès médical," M. Romain Vigoroux speculates as follows: "Among the innumerable preservatives against cholera which are being

proposed daily, some are manifestly insignificant; others may end in weakening the system, and thus defeat their object; but still others, more rational, consist in the employment of antiseptics. But antiseptics are numerous; in general, each of them acts only upon a particular category of inferior organisms. How, then, shall we make a choice, since we know neither the agent of transmission of cholera nor the conditions of its existence? In this state of uncertainty, it is logical to seek for an antiseptic with the most extensive sphere of action, and one which exerts its destructive effect upon parasitic elements indiscriminately. These things considered, ozone should be placed in the front rank. Moreover, it has already attracted the attention of physicians. In England, particularly, it was proposed, about twelve years ago, to make cholera patients breathe ozone. M. Pasteur's learned collaborator, M. Duclaux, thus expresses himself on this point:

"The experiments of Boillot, of Angus Smith, and of Chappuis bear testimony that, in certain cases, ozone may be a very active disinfecting agent. M. Chappuis submitted wads of cotton, charged with dust collected from the air, to the action of a current of ozone, and found that they could then be sown in a nutritive solution without growing. So far as I know, the amounts of ozone necessary to produce disinfection have never been measured experimentally, but without doubt they may be very small; and, if arrangements are made to make the disinfection continuous—if, consequently, the element of time is availed of—there is ground to hope for good results.

"As a matter of fact, it is comparatively easy to charge air with appreciable amounts of ozone. There are many ozonizers, some of which are very efficient, but the most practicable measure is founded on the use of essences. Schönbein was the first to observe that certain essential oils disengage ozone during the process of their oxidation. Angus Smith made a classification of the more common of the volatile oils according to the amounts of ozone they thus disengage, taking for his guide the tints imparted to ozonometric paper. He placed essence of orange-peel in the first rank, then essence of turpentine, then those of juniper, of cumin, and of lavender. On account of its cheapness, oil of turpentine is the most available, and a current of air circulating over large-meshed fabrics saturated with the essence would deserve study as a disinfecting agent."

"Two chief things will be remarked in this quotation: In the first place, the result of M. Chappuis's experiments, which prove that ozone neutralizes *all* the germs contained in the atmosphere; then the known fact that the essences owe their incontestable efficiency to the production of a certain quantity of ozone. In this connection it can not be denied that, as a means of disengaging ozone for the disinfecting of houses, the exposure of essential oils to the open air is within the reach of all; but, if it is a question of more localized applications, and where the quantity of the gas must be more considerable, it is quite necessary to resort to the ozonizing apparatuses, such as those of Houreaux, Siemens, A. Thénard, and Berthelot. All these apparatuses are founded on the property possessed by the electric discharge of partially transforming oxygen into its isomer. Let us add two important details: On the one hand, the obscure discharge is much more active than the electric spark, and, on the other hand, the mixture of certain gases with the oxygen favors its transformation. Of all gases, nitrogen is the most efficient in this respect. The production ought, therefore, to be very easily brought about by the obscure discharge in the air.

"This being the case, it will be seen that electrization with the electrical machine that is now getting to be used in electro-therapeutics furnishes conditions in the highest degree favorable to ozonization. To convince one's self of this, there is no occasion to have recourse to ozonometric paper. So soon as the machine is set in operation, ozone announces its presence by its characteristic odor. This odor becomes much more marked if, without provoking a spark, a metallic exciter with a pointed end, or a blunt shaft of wood, is directed toward the patient seated on the isolating stool. Some patients declare that, after having been thus electrified, the smell of ozone clings to their clothing and to their skin for several hours, and even until the following day. In such a case, it will be seen, the ozone is not merely diffused through the air; it is produced on the surface of the body which it impregnates—that is to say, at the very limit which the morbid agent must pass in order to become dangerous.

"Given, then, the preventive properties of ozone, is it not evident that the surest way of making use of them is by static electrization? We are thus led to consider this electrization as one of the most rational among the preventives of cholera. We have the less hesitation in selecting it, because, besides its prophylactic action, it presents, contrary to most of the means that have been recommended, the positive advantage of improving nutrition, and thus increasing the vital resistance. The remarkable accelerating influence of static electricity on the chemical phenomena of nutrition explains its utility in numerous morbid states connected with a retardation of this function.

"Not to speak of clinical observations, we have observed a fact which well shows the energy of this action of electricity on the intimate phenomena of nutrition: the simple electric bath, i. e., a stay of a few minutes on the isolating stool, suffices to raise the temperature from 0.8° to 0.7° C., according to the peculiarities of the subject. This is not the place to insist upon this argument, which we propose to develop in a special work. We may now formulate the following conclusion:

"According to data generally admitted in regard to the prophylaxis of cholera, static electrization practiced daily is the means of which the efficacy is the most probable. It acts at the same time by producing an antiseptic *par excellence*, ozone, and by stimulating all the functions of the organism, and especially that of nutrition."

Peptonized Fibrin as a Food for the Insane.—At a recent meeting of the *Société de Biologie*, a report of which we find in the same journal, M. Grehant gave the following formula of a "peptone of fibrin" which he had used in the alimentation of the insane:

Commercial pepsin.....	2 grammes;
Fibrin (from the slaughter-houses).....	100 "
Water.....	1,000 "
Hydrochloric acid.....	1 cubic centimetre.

M. Bouchereau had fed insane patients with this preparation, and had found improvement at the end of a month or six weeks. He proposed to continue his experiments. He had not ascertained whether or not there had been any increase in the excretion of urea. The "*péripéptone*" had always been given by the mouth, and never as an enema. M. Henninger had experimented with peptones in the form of enema in one patient, without provoking proctitis, and the excretion of urea had been increased to the extent of four or five grammes in the twenty-four hours. M. Quinquand had tried the "*fibri-peptone*" with his patients, giving two hundred grammes daily, in thin bouillon. There had always been an increase of weight, together with a heightened excretion of urea and carbonic acid.

A Classification of Antiseptics has been made by Dr. Miquel ("*Annuaire météorologique de Montsouris*," 1884; "*Progrès médical*," July 10, 1884), according to their power of destroying the micro-organisms in beef-broth. He makes three classes, as follows:

I. *Substances "eminently" antiseptic*: 1° Biniodide of mercury; 2° iodide of silver; 3° oxygenized water; 4° bichloride of mercury; 5° nitrate of silver.

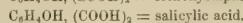
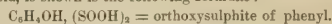
II. *Substances "very highly" antiseptic*: 7° Chromic acid; 8° chlorine; 9° iodine; 12° hydrocyanic acid; 14° bromine; 15° iodoform; 18° chloroform; 19° sulphate of copper.

III. *Substances "highly" antiseptic*: 20° Salicylic acid; 21° benzoic acid; 22° cyanide of potassium; 23° picric acid; 29° chloride of zinc; 30° thymol; 43° phenic acid; 44° permanganate of potassium; 49° tannin; 51° tartaric acid; 52° citric acid, arsenious acid, boric acid, hydrate of chloral, sulphate of iron, ordinary alcohol, and hyposulphite of sodium.

The author of the abstract in the "*Progrès médical*" remarks that the results on which M. Miquel's classification is based should not be held to apply to the lower organisms in general, but only to those that were propagated in beef-broth.

Orthoxysulphite of Phenyl.—In the "*Journal*" for July 19th we gave a brief note in regard to this new antiseptic. In a summary recently published in the "*Pharmaceutische Rundschau*" some further facts of interest are stated. Besides the name given in the heading of this paragraph, the substance is also called orthoxyphenyl sulphurous acid (*acidum orthoxyphenylsulphurosum*), and the term "aseptol" has

been applied to it. Its molecular structure, as compared with that of salicylic acid, is shown in the following formulae:



Orthoxysulphite of phenyl is a viscid, slightly reddish liquid, of the specific gravity of 1.450, with an odor somewhat like that of carbolic acid, but feebleness, and is said to be miscible with water in all proportions. Its antiseptic and anti-fermentative properties are described as being fully equal to those of carbolic acid. For internal use, the dose ranges between that of carbolic acid and that of salicylic acid, and, used within that range, it has not thus far given rise to toxic symptoms. For lotions, injections, etc., it is serviceable dissolved in ordinary water in the proportion of 1 to 1,000.

The Action of Iodide of Methylene, according to recent investigations by E. Schwerin ("*Centralbl. f. d. med. Wissen.*," 1884, 9, 10; "*Deutsche Med.-Zeitung*," 1884, 57), like that of the analogous chlorinated methane product, bichloride of methylene, is stupefying, anæsthetic, and hypnotic. After a brief period of excitement, both cold-blooded and warm-blooded animals, when exposed to the action of its vapor, become somnolent, the frequency of their respiration falls, their pupils become contracted, and they are deeply narcotized, but the reflex irritability is not abolished. The deep sleep lasts for two hours. The ingestion of the substance into the stomach causes either a soporose or a cataleptic condition. Most of the animals experimented upon died within a few hours after the sleep had passed off. The author considers that the hypnotic effect is due to the organic constituents of the compound, while the fatal result is caused by the iodine, which may be detected in the brain.

The Action of Hydrate of Chloral on the Cerebral Circulation.—In an article on the action of various medicines on the intra-cranial circulation, Curci ("*Sperimentale*," "*Deutsche Med.-Zeitung*") infers that chloral causes cerebral anæmia, for the bulk of the brain is decidedly diminished during the sleep that the drug produces. Although at first the pulsations of the brain are more marked than normal, they subsequently become smaller and more frequent.

The Value of Phosphorus in the Treatment of Rickets.—Soltmann ("*Breslauer ärztl. Zeitschr.*," "*Deutsche Med.-Zeitung*") declares himself in enthusiastic accord with Kassowitz in regard to the great value of phosphorus in the treatment of rickets, but his paper is theoretical in its scope, as he reserves his facts for a subsequent communication. *Per contra*, Schwachten, who made the abstract of Soltmann's article for the "*Deutsche Medizinisch-Zeitung*," declares that his own experience does not support the views of that author and Kassowitz, and he quotes Weiss, of Prague, to the same purpose.

The Supra-frontal Sulcus.—The "*Gazzetta Medica Italiana-Lombardia*" gives a summary of a description, by Professor G. Zoja ("*Archivio Italiano per le Mal. Nerv.*," etc., iv, 1884), of a sulcus which that author has met with in rather more than sixteen per cent. of the skulls that he has examined, and which he thinks has not hitherto been sufficiently known. He thinks it is probably due to the pulsations of the external frontal artery. It is found oftener in women than in men, oftener on one side than on both, oftener on the left side than on the right, and appears common to both ancient and modern crania and to all races.

Personal Precautions against Cholera, as understood in the last century, are summarized in the following quatrain, quoted in a recent lecture by Professor Castan, of Montpellier, a report of which we find in the "*Gazette hebdomadaire des sciences médicales de Montpellier*":

*Tiens tes pattes en chaudi,
Tiens rides tes banyans,
Ne vois pas Marguérîte;
Du choléra tu seras quitte.*

Italian Medical Journals.—According to the "*Raccoglitore Medico*," quoted in the "*Deutsche Medizinisch-Zeitung*," there are fifty-one medical journals published in Italy—seven in Milan, two in Pavia, one in Padua, one in Venice, five in Turin, two in Genoa, two in Piacenza, one in Modena, one in Reggio Emilia, two in Bologna, three in Florence, one in Forlì, one in Pisa, four in Rome, ten in Naples, four in Palermo, one in Messina, one in Ariccia, one in Bari, and one in Siena.

Lectures and Addresses.

ON THE DEVELOPMENT OF PHYSIOLOGICAL CHEMISTRY AND ITS SIGNIFICANCE FOR MEDICINE:

AN ADDRESS DELIVERED AT THE CELEBRATION OF THE
OPENING OF THE NEW INSTITUTE FOR PHYSIO-
LOGICAL CHEMISTRY OF THE IMPERIAL
UNIVERSITY OF STRASSBURG,
FEBRUARY 18, 1884.*

By PROFESSOR FELIX HOPPE-SEYLER.

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THE mere opening of another large and elegant structure in connection with Strassburg University can in itself have no great interest, as of these there are already so many. This is, however, the first building erected by a German university for the investigation and teaching of the science of physiological chemistry. Allow me, then, to give the objects for which this building has been erected, afterward a short sketch of the history of physiological chemistry, and finally to indicate what the plan and arrangements of the structure itself are. For hundreds of years have able physicians zealously interested themselves with the chemical investigation of the composition of the organs of the human body and its life-processes, the knowledge of which seemed of great value in determining the causes, course, and treatment of disease. Previous to the discovery of oxygen by Priestley and Scheele, and to the time when the penetrating Lavoisier, with experiments of previously unknown accuracy, gave chemistry a surer foundation, very little came out of this investigation. Especially such discoveries as that of the composition of water, of carbon dioxide, and of other important compounds of a simple kind, are to be noted in this connection. It would be wholly wrong to suppose that the brilliant discoveries of the last quarter of the eighteenth century were the results of this period alone; in fact, the way had been already prepared, and other important discoveries made. Among others, the numerous and valuable discoveries of Scheele, the accurate measurings and weighings of Lavoisier, and his proposed antiphlogistic theory, gave alike an invaluable foundation for the science of chemistry, and also a point of observation for its organization.

Already these beginnings of scientific chemistry had shown themselves fruitful for physiology. The investigations of Scheele, Lavoisier, and Van Ingen-Housz on the respiration of animals, sprouting seeds, green plants, etc.,

gave physiology a deep insight into the chemical relations of organisms to the surrounding atmosphere. Scientific chemistry and physiological chemistry have here alike a common origin. But, though by Scheele and many others, especially French chemists, many important substances of the animal and plant world were brought to light, yet organic chemistry, and with it physiology, remained far in the rear of the advancing knowledge of inorganic substances. The limitation of the attention to the inorganic part of chemistry was authorized, inasmuch as it was to furnish that knowledge which for all time would remain a certain basis.

In the second decade of our century chemistry again began to grow and to be the food of physiology. Organic chemistry remained as yet almost identical with animal and plant chemistry. The labors of Chevreul on the fats, of Prout, Tiedemann, and Gmelin on digestion, of Prevost and Dumas on the composition of the blood and the formation of urea, which belong to this period, wonderfully enriched our knowledge of life-processes. In 1828 Wöhler accomplished the synthetic formation of urea from cyanic acid, previously discovered by him, and ammonia. *For the first time, here was a substance, which had been previously known only as a normal product of the processes of life, formed out of its inorganic elements.*

Soon after, Berzelius and Liebig greatly increased the existing knowledge of organic substances. A theoretical war of thirty years' duration sprang up, but it proved fruitful in investigation, especially of the organic realm. Organic synthesis, together with the explanation of theoretical points; the rearrangement of groups on physical and chemical grounds; the mechanical theory of gases and vapors, which first gave a foundation for the estimation of the relative weight of molecules and the number of the atoms contained therein; the relation of atoms in molecules; and the theory of organic chemistry in its essentials, founded on the affinities of the carbon atoms—offering many points difficult of solution and still controverted—all was the fruit of this period.

It would be difficult to enumerate all the chemists to whom this progress was due, but the names of Laurent and Kekulé are the foremost. It could justly be said, as Lothar Meyer said in 1864, that already for a long period the controversy over the systematic arrangement of chemistry had ended. In consequence of this controversy, however, physiological chemistry had in general been overlooked, though Liebig was not one of those who neglected it. From 1830 till old age, though engaged in almost every controversy of the time, he labored to advance it. He had himself worked out excellent methods of determination, and had made investigations into the constitution of flesh; and his keen insight gave to his pupils correct methods of research for the accomplishment of decided results. The pregnant ideas of his writings prompted numerous valuable researches. His investigations of the relation of food to life-processes and to muscle-work are especially noteworthy. They have directly or indirectly led to researches of wide application to agriculture, medicine, and hygiene, and especially in the last ten years. Though the hypothesis relating

* Any views of Professor Hoppe-Seyler's on the relations of physiological chemistry must attract attention in every quarter of the world. This translation has been undertaken in the hope of bringing the matter of his recent address within reach of a larger number. While the first few pages have been rendered freely and somewhat condensed, a closely literal translation has been given of the remaining ones, owing to the importance, originality, and extreme interest, alike to biologists, chemists, and physicians, of the opinions they contain. The admiration and gratitude of the pupil have rendered the task pleasant.—THE TRANSLATOR.

to the formation of fat within the organs from albuminous matters has proved erroneous, the results of the work of this period in their practical worth remain uncontroverted.

Important advances were made in other directions. Ferments acting on diastase and starch were discovered in the saliva, and afterward in the pancreatic secretion. Schwann extracted pepsin from the mucous membrane of the dead stomach with dilute hydrochloric acid; and the action of this artificial digestive fluid on albumin was ascertained. C. Bernard subsequently discovered the emulsifying action of the pancreatic juice on fat, and the remarkable formation and changes of carbohydrates in the animal body, especially in the liver, as dependent on the method of feeding; and various other influences were recognized. The composition and conditions of secretion of the various digestive fluids in their main outlines were ascertained. With new and excellent methods and apparatus, and by very numerous and varied researches, was the interchange of gases in the respiration of animals of different classes, under varying conditions of nutrition and many other circumstances, investigated by Regnault and Reiset.

New substances were found in the organs of men and animals in health and disease. With the noted researches of Liebig on flesh may be ranked the labors of Strecker on the biliary acids; of Strecker and Scherer on xanthin, hypoxanthin, and guanin; of Frerichs and Städeler on leucin, tyrosin, etc.

The investigation of the composition of the blood in health and disease was at this period the subject of numerous researches in Germany and France. C. Schmidt's research "On the Characteristics of Epidemic Cholera" deserves special mention. Nor have these researches remained without fruit, though the over-zealous opposition of the Prague-Vienna school against bloodletting had an injurious influence, which has not yet been wholly removed.

Of enormous value for physiology was the discovery of Magnus that from the blood, when subjected to a good vacuum, together with carbon dioxide and a little nitrogen, oxygen also was given off, and, in fact, more from arterial than from venous blood. Few then anticipated, with Johannes Müller, the enormous consequences of Magnus's discovery, and, in fact, able chemists were at once ready to controvert it.

The researches of Schönbein on the peculiarities of oxygen in different conditions; the formation of ozone, hydrogen superoxide, etc., did not receive generally the attention they deserved. Liebig fully understood their value.

To the casual observer, looking from a distance, nothing very striking in the development of physiological chemistry may seem to have occurred in the last twenty or twenty-five years. It has, however, been in good fortune. The general advance of chemistry, especially since 1850, and in particular the improved methods of gas analysis due to Bunsen—the improvement in apparatus, spectrum analysis, etc.—have all contributed to the advance of physiological chemistry.

The publication in the second half of the fifth decade of this century of Virchow's "Cellular Pathology," together with the researches of Max Schultze on the structure of animal cells, which soon followed, though of no direct

bearing on physiological chemistry, yet afforded new points of view. The researches of Pasteur and his pupils and opponents, from the beginning of the sixth decade onward, have had a notable influence on physiological chemistry.

These researches, though as yet abounding in obscurities and uncertainties, have still given results of the highest value for the technique and for medicine.

The treatment of wounds to the exclusion of infection, the relation of sepsis to operative surgery, and the discovery of micro-organisms of definite character in the blood in certain diseases, are of a value well recognized. There is no limited region of natural science which at the present time attracts zealous investigators in so great numbers as the microscopic determination of the conditions of life and propagation of these micro-organisms. Botanists, chemists, physiologists, normal and pathological anatomists, surgeons, pathologists, and hygienists contend in the race in this realm of investigation.

Difficult is it to separate the chaff from the wheat. Owing to the extreme minuteness of these organisms, their anatomical investigation and certain separation are very difficult. But the difficulty is greatly increased, owing to the power many of them possess, according to the conditions under which they are found, of developing into entirely different forms, and at the same time occasioning entirely different chemical processes, according as the chemical and physical conditions surrounding them vary.

Physiological chemistry partakes of a far greater share of difficulty than the microscopic investigation, which, apart from the method, now much used, of impregnation with coloring matters (which also leads to manifold deception), without simultaneous chemical investigation with sufficient certainty, can not make great advances. This investigation, as I shall soon have occasion to illustrate, brings great gain to physiology itself.

I must abstain from giving you a complete outline of the advances physiological chemistry has made with reference to the composition of the organs and fluids of the human body, and the processes taking place in them, effected in the last two decades. Allow me to sketch the manner in which, in the most recent period, the science has advanced.

With great diligence, and not without success, the processes of the digestion of all the most important constituents of food in the alimentary canal, with the sole exception of the part played by the bile (which, indeed, does not seem essential, and which is wanting in invertebrates), have been studied, and it has been ascertained that these processes in all their phases may be carried on outside the organism, and the products of their action isolated and investigated. Medicine and hygiene in this case, as well as physiology, have become possessed of treasures of knowledge the practical value of which already abundantly appears, but *far short of the extent to which it must appear in the diagnosis and treatment of diseases of the alimentary tract especially.*

Our knowledge of the composition of the blood and its changes under the influence of certain physiological processes has been essentially advanced in the line referred to; and the chemical functions of the red corpuscles in respira-

tion, especially the influence of the coloring matter in reference to the absorption of oxygen from the air in the lungs, its transportation to the cells of the organs, and their proximate causes, are so well known that, in a given case, it is merely a question of reckoning to determine the total quantity of oxygen appropriated in a given period by definite extents of surface, etc.

With reference to the life-processes within organs, such as muscles and glands, the passage of the free, indifferent oxygen of the air into these organs has been demonstrated with certainty. The chemical structure of numerous substances already known which arise in the organism has been determined, and their formation by synthesis accomplished; others have been discovered and to some extent artificially formed, and many general laws in regard to their formation and behavior with reference to the peculiarities of their chemical structure discovered, and, above all, the interesting formation and processes of change of the aromatic bodies in their characteristic combinations with sulphuric acid, glycocholl, glycuronic acid, and cystin.

By the last-mentioned investigation have the methods and results of the new theoretical chemistry become of great value for physiology, while interesting new material for chemistry has appeared.

Even with more and more clearness during the course of these investigations has the fact become recognized that the substances which form the organs, out of which they build themselves up and are regenerated, belong to a class which may be included under the term *anhydrides*, and which have the common property that, under treatment with alkalis and acids, many of them also, through fermentations, can be changed or split up with the addition of the elements of water, thereby, as it is said, becoming hydrates.

These anhydrides show mostly in striking chemical affinities, swell in water or dissolve generally with difficulty in it; they withstand the action of the atmospheric oxygen, and, so far as it can yet be made out, have very large molecules.

Animals and plants are, as regards these substances in general, not different, though certain substances, as albuminous matters, fats, and inosit, appear in both; others, as cellulose, starch, cane-sugar, tannic acid, and malic acid, only in plants; others, again, as glycogen, less in plants than in animals; finally, certain substances, as gelatin, urea, and creatin, are formed only in animals.

The line of demarkation which it was once thought could be drawn in regard to chemical structure and life-processes between plants and animals has been, in consequence of recent investigations, more and more obliterated.

The discovery of inosit, glycogen, and allantoin in plants; the establishment of closer relations between the caffeine and theobromine of plants and the xanthin and guanin of animals, especially the presence, without exception, of globulin substance, lecithin, cholesterolin, nuclein, and potassium in all cells formed under normal or pathological conditions so far as yet investigated, whether in man or in the highest or lowest animals and plants—all these considerations must bring us to the conviction that *definite fundamental chemical formations and changes are common to all living beings, and that the life-processes common to them all,*

especially their growth through formation of their own substance and their propagation without limit under conditions peculiar to them, must be formed in the presence of those chemical constituents; that also in the further processes of change, often appearing so different in the different classes, orders, and families of animals and plants, many processes can take place according to a conformable fundamental type; and that finally in the life-processes of man these parallels are again found, whose simplest manifestation we, perhaps, follow with the least difficulty in the lowest organisms.

We are thus brought to a definite unity in the original chemical structure and processes of living existence, a point which the microscopico-anatomical investigation of the morphological development has already reached. The chemical characters are, however, much more within our ken than the microscopic, since the latter take cognizance of the simplest forms of existence, as plastic, variable, or irregularly formed little masses.

When the chemical components of the cells or the protoplasm, or any formed organ of animals or plants, is spoken of, it is, of course, to be observed that we yet have no right to speak of the constituents of living cells, but only of the products of their chemical decomposition. A series of observations of different kinds points in the direction of the conclusion that the change which simple protoplasm, as well as complicated organs, undergoes on the entrance into the death state, arises from the chemical addition of water. If the water essential for all life-processes be removed, life is indeed suspended, but death does not, in consequence of this alone, follow. Plants, insects, amphibians (e.g., tritons), and frogs can for a long period remain hard frozen; their life is thereby fully suspended; after being slowly thawed out, the organs take on again all their life-functions. The noses, ears, hands, and feet of men act similarly when frozen by a degree of cold not too intense. But such frozen organs die at once if thawed out too quickly, inasmuch as the melting ice-crystals injure the cells in juxtaposition to them. Carefully dried seeds of plants—e.g., peas—can be kept heated for hours at 100° C. without their vitality disappearing. They sprout, after cooling, when placed in water or moist earth just as quickly as undried and unheated peas, and develop to perfectly healthy plants. If the seeds are not carefully and fully dried before the heating, they perish under 60° C. If now, from these and many other experiences, it is to be concluded that the death of protoplasm arises from assumption of water, then must it be assumed that the *forms of living protoplasm conduct themselves in respect to the substances found in the dead forms of the same as anhydrides do to their hydrides or decomposition products*, unless some further insight into this matter is forthcoming.

(To be concluded.)

Medical Life Peers.—"The Lancet" (July 12, 1884) says: We understand that Dr. Lyons, M.P., has given notice of an important amendment to be inserted in the Medical Act Amendment Bill, to the effect that two physicians of over twenty years' standing should be made life peers and act as lord justices of appeal in medico-legal trials. Such appointments have been urged by Sir Spencer Wells, Dr. Theodore Williams, and others, and will, if made, considerably strengthen the hands of justice.

Original Communications.

A CRITICISM OF

DR. FORMAD'S PRINTED STATEMENTS
AND CONCLUSIONS CONCERNING THE
ÆTIOLOGY OF TUBERCULOSIS.

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(Concluded from page 146.)

ANOTHER specimen of our author's peculiar method of ratiocination frequently exemplified in his consideration of the ætiology of tuberculosis is subjoined.

After arguing against the conclusions of Tappeiner by misrepresenting his experiments, as has been already shown, our author proceeds to prove that neither general tuberculosis nor pulmonary tuberculosis can be produced in the dog by inhalation either of indifferent matter or of tuberculous matter, and to declare that his own experiments, which he *promises* shall be forthcoming at some future time, and "the experiments of Schottelius, Wargunin and Rajewsky, Weichselbaum, and others, make Tappeiner's assertions perfectly untenable."

As to the results of the author's own experiments upon this point, he will perhaps excuse us from attempting to estimate their weight in the settlement of this question until we are fully apprised of their character and details. We may be allowed, however, to offer the hope that, ere the future time of these promised experiments has arrived, the author will have found "the pivot of the question" and have learned "what to call a tubercle or a tubercular lesion."

As to the results of the other experimenters, they are, it is to be presumed, relied upon by the author to show that in dogs the products of the inhalations do not extend beyond the lungs and are nothing but nodules, more or less diffuse, of broncho-pneumonia. Very good. Now let us arrest ourselves for a moment and turn back again, to learn, if possible, what our author means by broncho-pneumonia.

On page 344 (*l. c.*, Feb. 9, 1884, par. 2, right column) occurs the following sentence: "I class myself with those who regard all forms of pulmonary phthisis as tubercular." The succeeding paragraph commences with these words: "The lesions that are known as catarrhal pneumonia, *broncho-pneumonia*, pneumonic phthisis, cheesy pneumonia, tubercular phthisis, and fibroid phthisis, are all manifestations of the one disease."

This is the way in which the products of inhalation which Tappeiner has obtained are shown to be simple broncho-pneumonia and non-tubercular in their nature. In this manner would the conclusion of Tappeiner, that tuberculosis can be communicated even to the highly resistant dog, be "proved a fiction" and declared untenable by our author. It may be set down to his credit, however, that while he contests the conclusions of Tappeiner concerning dogs he generously admits "that the pulmonary tubercu-

losis may occasionally be produced in rabbits by these means" (Par. 2, right column, page 489, "Phila. Med. Times," April 5.)

In disposing of the fourth point, *d*, we might urge that all there is now left of it is that non-tubercular substances may sometimes produce, by inhalation, broncho-pneumonic foci in the dog, and leave this question just there until our author has learned some method by which he can satisfy even himself as to whether his broncho-pneumonic foci are tubercular or not, and as to whether, by some fixed anatomical criterion, he knows how to distinguish between these pneumonic foci and true tubercles.

But the citation by our author of the experiments of Weichselbaum, as in harmony with those of Schottelius and as a part of "the proof" which makes "Tappeiner's assertions perfectly untenable," gives occasion for their recital here in order to show that Weichselbaum also has been characteristically misrepresented.

As for Weichselbaum's own *deductions* from his experiments, the following shows not only that he is by no means in accord with Schottelius (who maintains that there is no difference between tuberculous matter and any indifferent material in the effect produced in dogs by inhalation), but that, on the contrary, Weichselbaum is rather more in agreement with Tappeiner.

Weichselbaum ("Inhalationstuberculose," "Centralblatt," xix, 1882, p. 340) says: "From the foregoing experiments it follows that not only tuberculous sputum, but certain other organic substances, possess the faculty of exciting tubercle-like nodules, but that, in spite of this, contrary to the results of the experiments of Schottelius, a difference in the effect of the above-mentioned substances must be admitted—namely, in tuberculous sputum there is contained a virus which, it matters not whether it enter the organism in smaller or greater quantity, whether it be deposited in the lungs or in the peritoneal cavity, calls forth, without exception, nodules of tubercle-like structure in great number, while other organic non-tubercular substances either can not at all, or only under certain conditions, produce similar nodules, and even then in small number."

But when the *experiments* of Weichselbaum are examined we find a still more complete agreement with and support of Tappeiner. These experiments comprised eleven upon dogs. Concerning the results of the latter, Weichselbaum says: "In all these cases . . . there were found tubercles in the lungs and kidneys, in the former generally very numerous, in the latter only scattering." These experiments also comprised three with a watery emulsion of cheese. In two of these a stinking cheese (similar to Limburger) was used for inhalation. The two dogs died: the larger at the end of a month, after having received six inhalations; the latter at the end of five days, after two inhalations. The cause of death was gastro-enteritis, "while nothing of tubercle or anything similar was found." In the remaining one of these three cases, however, where a sort of cheese which did not smell badly was used for inhalation fifteen times in seventeen days, "twenty-four nodules the size of a millet-seed could be demonstrated in the lungs, and one submiliary nodule in each kidney, which showed a

structure similar to that of the tubercles in the first-mentioned experiments."

"For control, two dogs were used; in the one dog, one Pravaz syringeful; in the other one, two syringefuls of the same cheesy emulsion used in the last experiment were injected into the peritoneal cavity; in neither case, however, were nodules found. The same negative result followed injection into two other dogs of tuberculous sputum which had been boiled for an hour, while unboiled tubercular sputum caused an abundant eruption of tubercles in the great omentum and mesentery.

"Furthermore, water-diluted pus from caries of a rib was employed for twelve inhalations within seven weeks, whereby a few scarce nodules, of a structure similar, however, to that of the tubercles of the first experiments, developed in the lungs.

"Finally a dog was made to inhale, sixteen times in twenty days, a watery emulsion of the spleen of an ox without the occurrence of nodules in a single organ."

Thus it is seen that of all Weichselbaum's experiments reported in the paper above mentioned, *only two* (viz., one of emulsion of non-stinking cheese, the other of pus from a carious rib) gave any warrant whatever for that author's deduction that "also certain other organic substances (besides tubercle sputum) possess the faculty of exciting tubercle-like nodules."

In criticism of these *two* experiments, it may be justly objected that, in the present state of our knowledge, it is impossible to know that the two organic substances used did not contain tubercle virus. Indeed, in the case of caries, according to a very widely accepted opinion among pathologists concerning the nature of that affection, it is highly probable that the carious pus used did contain tubercle virus. As for the use of cheese in experiments to prove that other substances than those which contain tubercle matter or virus are capable of producing tuberculosis, the objection is also obvious. It is founded upon the fact that there is a widespread belief among medical men, based upon the actual observations and experiments of known and respected authorities, that it is not only possible, but even probable, that milk from tuberculous cows may contain tuberculous matter. Who, then, can know that the particular piece of cheese used for experiment in this case did not come from a tuberculous cow? What guarantee is there that in this emulsion some tubercular matter or virus was not suspended? We are well aware that there are those, and probably our author is one, who may think such an objection a little strained. But it must be remembered—for it seems to be often forgotten—that *the one point* to be determined by all those experiments to produce artificial tuberculosis is now not to learn if tuberculous matter can by inoculation produce tuberculosis, for this is now incontestable and is admitted by all respected investigators. The *one point* to be fixed and determined is whether or not substances which *certainly contain no tubercular matter or virus* can produce the same disease. For the settlement of such a question it is therefore necessary to be absolutely *assured* that the substances used for experiment can by no possibility contain or be accompanied by tubercular matter or virus.

We have now reached, in our reverse order, the first standpoint from which our author considers his first proposition: namely, that of *inoculation experiments*.

In the course of discussion the customary vein of the author becomes diversified now and then by the introduction of a spirit of captiousness, of which the following may be instanced as an example: Having again mooted the question of the identity of human tuberculosis with that produced experimentally in animals, our author proceeds to annihilate "at one fell swoop" both Dr. Koch and his knowledge of pathological histology by the declaration that "it is hardly within the province of the mycologist to teach us what is tubercle and what is not." (*Phila. Med. Times*, April 5, p. 488, right column, par. 6.)

There are one or two statements in this portion of our author's consideration of his first proposition which deserve to be noticed here.

Appropos of the discussion of Koch's inoculation experiments and statements concerning the relation of the tubercle bacillus to tubercular lesions, Dr. Formad seems to deny that there is any positive and reliable means of distinguishing the tubercle bacillus from other bacilli, for he objects to attempting to diagnose, by means of the bacillus, lesions which appear to be tuberculous and which contain tubercle bacilli, "because similar bacilli may be found in the lesions of various processes resulting in cheesy products (see bacillus chapter)." (*L. c.*, par. 4.) Here the author is not only in conflict with nearly the whole world of investigators, but, as usual, is also in combat with himself.

Referring, as directed, to the bacillus chapter, we find that the author, after a long review of the published observations upon the occurrence of the tubercle bacillus in the sputum and elsewhere, has summarized his views concerning the peculiar diagnostic characteristics of the tubercle bacillus as follows: "From our present knowledge of the occurrence of Koch's bacillus in the sputum, we must therefore conclude: 1. That the presence of bacilli is a valuable *diagnostic sign* of tubercular disease of the lung." (*L. c.*, March 22, 1884, p. 452, right column, pars. 2 and 3.)

Further: "To detect bacilli is a very simple matter, although by far not so easy as to prepare a specimen of urine and to find the all-important tube-casts." (*L. c.*, p. 445, right column, foot-note.)

And again we quote the author's words: "It (the bacillus tuberculosis) is concomitant with most tubercular lesions. It is *diagnostic of tubercular change*. It is, on account of its irritant properties, one of the causes of tuberculosis." (*L. c.*, Feb. 9, 1884, p. 338, left column, par. 3.)

Finally, we quote from his conclusions at the end of his paper: "From the above analysis of the bacillus question and of the *ætiology* of tuberculosis the conclusions follow: 1. That the bacillus of Koch is a valuable diagnostic sign of tubercular disease." (*L. c.*, April 5, 1884, p. 497, left column, par. 5.)

We might rest here, but at the latter end of the chapter referred to there are two important affirmations and arguments built thereon, which should not pass unchallenged. It is asserted that "bacilli, not distinguishable from tubercle

bacilli, are met with in lupus and leprosy." (*L. c.*, p. 453, right column, par. 6.)

When our author says, in support of his statement as to lepra, that "the bacillus of leprosy, in specimens which I had the opportunity to examine, appears to me also perfectly identical with the small forms of tubercle bacilli; although the lepra bacillus may, perhaps, look more sharp-pointed to the eyes of others, and may fail to take the brown stain" (*L. c.*, par. 7), he states his only argument in support of this declaration as to the lepra bacillus, and at the same time utters a sentence of which the last half is antagonistic to the first half. Each member of this sentence is assailable, and is, moreover, positively misleading. In estimating the value of our author's testimony concerning the perfect identity of the tubercle and lepra bacilli, it is important that something be known of the character and extent of the examination of the lepra bacillus he claims to have had the opportunity to make. It is not impertinent to this matter to inquire why the statement of the *whole truth* concerning this examination of the lepra bacilli has not been made. Is it possible that the author fails to appreciate the right of the reader to know the qualifying facts, that the few specimens of lepra bacillus examined by him were permanent preparations in the possession of others, that he could not personally vouch for their genuineness, and that he knew nothing of the methods by which they had been stained? Take the last member of this somewhat characteristic sentence; it also contains a characteristically inaccurate statement of fact. The concluding phrase thereof constitutes an expression of fact directly opposite to the truth, and reads as follows: "and (although the *lepra bacillus*) may fail to take the brown stain." The truth relative to the distinguishing micro-chemical reaction of the two bacilli in question is accurately stated thus: "and (although the *tubercle bacillus*) may fail to take the brown stain," while, on the contrary, the lepra bacillus may readily absorb it. (Refer to Koch's views on this point, quoted in the first part of this article.)

As to the author's objection that "bacilli, not distinguishable from tubercle bacilli, are met with in lupus," the answer is patent. First, let it be absolutely demonstrated that in none of the forms of lupus have we to do with a disease mainly local in the skin, but which in its nature is really tuberculous. Until that be done it is not only futile, but it is a waste of energy, to urge that the few scattering bacilli which very rarely have been found in the lesions of lupus are not genuine tubercle bacilli.

The author demands absolute proof at the hands of Koch and others who hold to the belief of the specific nature of tuberculosis. Let him also, as well as others, rely upon and advance evidence which is absolutely unassailable. There are now, and for many years have been, not only distinguished dermatologists, but also equally respectable pathologists and clinicians, who have been, and are, inclined to recognize lupus, scrofulosis, and tuberculosis as mere variations, due more or less to local conditions of the action of one and the same morbid cause.

There is one more argument used by our author in the discussion of his first proposition from the stand-

point of inoculation experiments which deserves to be considered.

In objecting to the use of the tubercle bacilli as one of the means of diagnosing a lesion in which they are imbedded, he says: "Besides, there are many spontaneous and artificially induced tubercular lesions in which bacilli could not be found." (*L. c.*, p. 488, right column, par. 4.)

Among the many considerations which weaken the force of this argument, the following may be mentioned. As customary, we state some of them by reproducing the author's own words.

In discussing the fact that tubercle bacilli are not always discovered even in phthisical sputum, in which, as every one knows, they are far more easily demonstrated than elsewhere, the author thus expresses himself: "The examination of sputum may thus in doubtful cases be quite misleading; for, if in any given case bacilli are not found, it should be taken into consideration . . . that the examiner may fail occasionally in any case to succeed in preparing a successful preparation of stained bacilli." (*L. c.*, March 22, p. 452, left column, par. 5.) How much the more is this true of the preparation and examination of sections of tissue in which the tubercle bacilli are imbedded, the experience of all workers shows. If occasional failure to see the bacilli in phthisical sputum does not invalidate the use of the tubercle bacillus as a *diagnostic sign* of the existence of the tuberculous process, certainly no man can consistently deny that the same tubercle bacilli may be used also as one of the means of diagnosis of tubercular products which contain them, simply because in such products the examiner may occasionally fail to see the tubercle bacillus.

As having a direct and important bearing upon the value of any deductions which the author may be disposed to draw from his failures to discover tubercle bacilli in certain tubercular lesions, it may be proper to examine his following statement: "A magnifying power of 400 diameters is nearly always sufficient to detect stained tubercle bacilli. In fact, we found that when we failed to find bacilli with a good $\frac{1}{2}$ objective, neither our $\frac{1}{2}$ Zeiss oil-immersion lens nor the Abbé condenser would reveal any when used (as we always do) for control." (*L. c.*, March 22, p. 446, left column, par. 1.)

Those who have been actual workers both with the high and the low power mentioned, both with and without the use of the Abbé condenser, can not but be struck with the absurdity of such a statement coming from one who would pretend to speak with authority about the presence or absence in the tissues of an object in every way so difficult of demonstration as is the tubercle bacillus when *in situ naturalis* in small numbers. It is, of course, possible, as every one knows, to use a magnifying power of 400 diameters, such as can be obtained by a good $\frac{1}{2}$ objective and a strong eye-piece, without the Abbé condenser, in the common clinical examination of sputa. But when any one says or ventures to intimate that he can, with even an approach to certainty, recognize isolated tubercle bacilli, in sections of tissues prepared for the microscope, without the aid of an Abbé or a similar sub-stage condenser and the use also of an excellent objective of very high power,

neither his negative observations nor the conclusions drawn from them will be credited by those who are practically familiar with both methods of examination. Yet our author has drawn most positive and important conclusions, not only from his failure to find any bacilli whatever in some tuberculous tissues, but also from his reported failure, in some instances, to find them in satisfactory numbers. From my own experience in the use of high and medium powers, with and without the aid of the Abbé sub-stage condenser, in the search for bacilli in the tissues; from the fact that I have never seen an Abbé condenser in use in the Pathological Laboratory of the University, or known such an instrument to be in common use there; as well as for other reasons not necessary to mention, I am free to confess that, for myself, I decline to accept these reported failures of the author as in any degree conclusive that in these very cases tubercle bacilli were not to be shown by proper methods and means of demonstration.

The author refers (*L. c.*, p. 446, right column, par. 4) to our joint examination, three months after our return to America, of a most beautiful and perfectly pure tubercle-bacillus culture with which Dr. Koch had kindly presented me. The flat salt-dish within which this culture was inclosed was opened for the first time in the University Laboratory, and some blood serum already prepared by the author was inoculated with a few of the scales. At the same time, several preparations of this culture were at once made for microscopic examination, the staining fluids belonging to the laboratory being employed. At the first examination of these preparations, made with the $\frac{1}{2}$ lens commonly used in that laboratory for the examination of sputum and other materials in searching for tubercle bacilli, it was impossible for either of us to determine whether we had under the microscope a pure culture or not. There were many rod-forms so short as to be practically unrecognizable as bacilli by means of that magnification and lens. Yet, when examined by the $\frac{1}{2}$ Zeiss homogeneous immersion, there was no longer any possible doubt that every bacterium visible was a characteristic tubercle bacillus.

Furthermore, the author refers, in his consideration of tuberculosis of the serous cavities, to four cases of "primary peritoneal and pleuritic tuberculosis" which have come under his observation during the last eighteen months, and takes occasion to state that "no bacilli could be discovered, even after repeated and careful search, in any of the lesions." (*L. c.*, Feb. 23d, p. 381, left column, par. 4.)

Inasmuch as the author has done me the honor of mention in the paragraph preceding the last quoted, I may, perhaps, be excused if I offer here some testimony of my own bearing more or less directly upon the last-mentioned negative observations of the author. Gross specimens of the abdominal lesions from one of several cases of primary tuberculosis of the peritonæum reported by our author as containing no tubercle bacilli recently came into my hands. A few isolated, small miliary nodules upon the peritonæum were snipped off carefully and quickly ground to a pulp (in a new agate mortar which had never been used and had been sterilized), with the addition of a few drops of water which contained no tubercle bacilli. Some of this pulp was spread

in a thin film upon a glass cover, in the manner of preparing sputum; this film was stained in the usual manner, after Ehrlich's method as employed by Koch. It was examined by me with a fine $\frac{1}{10}$ immersion objective, with the aid of an Abbé condenser, and was found to contain a small number of tubercle bacilli which were characteristically, although somewhat faintly, stained.

But there is yet a more serious reason for declining to accept as conclusive the assertions of our author concerning his own experience with the tubercle bacillus. Loyalty to the cause of pathological research, as well as the gravity of the subject discussed, demands that it should be stated. I refer to an evident disposition on the part of the author, frequently manifested even in print, to magnify and misrepresent the observations which he undertakes to report.

Perhaps one of the most glaring examples of such a disposition to be found in the second paper of the author is the following:

Speaking of the well-known experiments of Ziegler, in which plates of glass were inserted into the subcutaneous tissue, our author has thus printed his observations:

"Ziegler very properly declared the latter product to be tubercle tissue. I have had, and have at present, ample opportunity to corroborate the accuracy of these observations. Ziegler's experiments were repeated in the Pathological Laboratory of the University of Pennsylvania by Hammer, and at present are being carried on by Woodnut. By these experiments, made, with slight modification, after the method of Ziegler, under varying conditions and upon various animals, it was shown that the granulation tissue gradually gave origin to tubercle nodules. Furthermore, these experiments showed that *the tubercle nodules and cheesy changes ensue without the action of bacilli*, as the latter were found not to be present where proper care was taken during the execution of the experiment to exclude them." (*L. c.*, Feb. 9, 1884, p. 342, left column, par. 1.)

With respect to the above-cited experiments of Woodnut we have nothing to say except that he was during that time not yet even a graduate in medicine, but only a young medical student, presumably more or less skillful, or more or less careless and inexperienced. But what of importance there is to be said relates to the above-mentioned experiments of Hammer. It is simply this: that it is a matter of common knowledge among the university people that Hammer's experiments and observations on this subject were both begun and completed long before Koch's first announcement of the existence of the tubercle bacillus, and that no one was better aware of that fact than the author when that statement was deliberately written for publication.

We have now reached the end of our criticism of the manner in which our author has considered his first proposition in the one page and a half which he devotes to that matter. After having thoroughly and carefully examined the two papers published by our author on the ætiology of tuberculosis, we are convinced that there is ample justification for the declaration that it is difficult to find, from one end to the other of these two papers, any two consecutive pages of print which are not equally defaced with similar faults. But we stated at the outset that we possessed neither

the time nor the inclination to touch upon all that appeared to us objectionable.

We shall end this communication by a brief examination of the sort of logic by which our author concludes that the tissues of the scrofulous possess a specific anatomical structure, and that the ætiology of tuberculosis is thereby explained.

During the discussion, before the Philadelphia Medical Society, of the author's last paper on tuberculosis, we took occasion to state some objections to the acceptance of his hypothesis concerning the lymph-spaces of the so-called scrofulous. (See "New York Medical Journal," June 14, 1884.) The reasons then urged will not be repeated here, but we will limit ourselves at this time to pointing out some statements of our author which, to our mind, are fatal to his hypothesis. Before quoting these statements, however, it may be well to call attention to a very serious gap in the connection between this alleged peculiarity of the lymph-spaces of the connective tissue, which our author has as yet made no effort to fill up by direct observations. We allude to the fact that, while the author claims to have demonstrated, in the scrofulous, the existence of a peculiar narrowing of the lymph-spaces in the connective tissue of the skin, of the subcutaneous tissue, and possibly also of the intermuscular connective tissue, he has entirely neglected the lymph-spaces of the lungs, the liver, the spleen, the kidneys, and the bones. One does not need to be a pathologist to be cognizant of the extreme rarity of tuberculosis of the skin, and of the extreme frequency of tuberculosis of those very organs whose lymph-spaces have not yet been studied by our author.

We now proceed to indicate the difficulties which our author has, according to his custom, placed in his own way.

After having reaffirmed his former assertions and conclusions concerning the lymph-spaces in the connective tissue of the scrofulous, our author thus delivers himself: "For details of my researches in this direction, I must refer to my first paper upon this subject." (*L. c.*, Feb. 23d, p. 378, right column, par. 2.)

Referring to that first paper we find the following: "Comparing a large number of sections taken from corresponding parts of the bodies of rabbits and cats, it is also distinctly seen that the lymph-spaces are on the average decidedly narrower and fewer in the rabbit than in the cat. *The perivascular spaces are, however, equally free and similar in both.*" (*L. c.*, Nov. 18, 1882, p. 113, right column, par. 1.)

Returning again to the second paper, we find the subjoined statements as to how and where tubercle originates: "*Primary tubercle occurs as a mere infiltration of lymphoid cells in the adventitia of blood-vessels (a term synonymous with perivascular lymph-spaces), or as small nodular masses of lymphoid infiltration around blood-vessels or ducts of any kind; or tubercle tissue may organize within blood-vessels and various ducts.*" (*L. c.*, Feb. 9, 1884, p. 342, left column, par. 3.)

Of the occurrence of *secondary* tubercles thus he has written: "These seem to lie *in the perivascular lymph-spaces*, and are probably distributed throughout the body

mainly by means of these lymph-channels of the blood-vessel walls. Tubercles do not occur in avascular tissues." (*L. c.*, right column, par. 3.)

We confess our utter inability to see how the occurrence of tubercles in locations where the lymph-channels are admitted by our author to be "equally free and similar in both" the so-called scrofulous and the non-scrofulous animals can have anything whatever to do with peculiarities which may possibly exist in other places. Perhaps the inventive ingenuity and surpassing skill in engineering of our author may enable him to remove some of these self-imposed obstacles, or to vault over them or brush them aside. For ourselves, in their present shape they appear insurmountable.

After the author, by revising a statement here, retracting one there, and by filling up that gap and this, shall have succeeded in bringing his *hypothesis* into complete accord with facts and common clinical experience, it will then remain for him to show that the claimed peculiarity of the lymph-spaces of certain men does not have quite as much to do with the ætiology of the lesions of syphilis as with those of tuberculosis. (See Cornil on "Syphilis," American edition, by Simes and White, pp. 24, 25, Philadelphia, 1882, and "Clinical Lectures on the Physiological Pathology and Treatment of Syphilis," by Fessenden N. Otis, M. D., New York, 1881.)

In the foregoing incomplete criticism of the author's printed assertions concerning the ætiology of tuberculosis we have, as far as possible, purposely avoided a general discussion of the latter subject, and have intentionally adhered closely to the text of his own papers, and to that of a few of those to whom he refers.

Our sole object has been an endeavor to discover, if possible, what degree of reliance, as a witness whose testimony is in conflict with that of Koch and others, can safely be placed upon the observations and conclusions which our author has already published as his contribution to the knowledge of the ætiology of tuberculosis.

We readily confess ourselves greatly at a loss for an adequate standard by which to measure that degree of reliance which they intrinsically deserve, for, so far as our reading of the extensive, extremely varied, and conflicting literature of this much-discussed subject has gone, it appears that these contributions of our author stand unique and without comparison. Perhaps the only practical gauge, after all, is that which each one will apply for himself. We leave the application to be made.

Finally, we are also somewhat at a loss for proper terms with which to conclude. Since, however, in the preceding pages we have so frequently turned the words of the author against himself, it may not be improper to continue this course to the end.

"Thus, above all, *negative evidence* must be carefully inquired into, not by relying upon the crippled and sometimes misrepresenting and meager quotations of some compiling writers, but by submitting the original communications of the authors and experimenters to a careful perusal." (*L. c.*, April 5, 1884, p. 494, left column, par. 3.)

We have pointed out striking "instances of the way in which an experimenter with preconceived and peculiar ideas

upon a subject may unconsciously be misled in forming conclusions from his own experiments." (*L. c.*, April 5, 1884, p. 495, left column, par. 2.) We have at the same time indicated how our own author, as well as "some of the younger German pathologists and a few of the prominent English surgeons, under the influence of the bacillus craze, will make in publications assertions entirely unwarrantable." (*L. c.*, Feb. 9, 1884, right column, par. 1.)

"All of the above statements are made by a scientific man and pathologist, and offered as broad facts in full earnest. I only have to say that here evidently observation is substituted by imagination and mere speculation; and all this is done for the sake of the convenience in explaining a disease by pretty hypotheses." (*L. c.*, par. 2.)

ON FAT EMBOLISM.

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By fat embolism is meant a plugging of small arteries by minute drops of fluid fat which, having been set free somewhere in the periphery, are carried into the venous circulation and thence distributed to various parts of the system. Inasmuch as the capillaries of the lungs offer the first lodging-place, fatty embolism of the lungs is that which is oftenest met with, and consequently recognized and studied; but a similar condition of affairs may obtain in the brain, choroid, kidneys, or other parts, provided only that there have been sufficient *vis a tergo* to force the fat globules through the pulmonary capillaries and into the systemic circulation.

As will be presently shown, pathologists have been but recently made familiar with all that the title of this paper implies, and it is with a hope that I may do my share in contributing to a better appreciation of the subject that I have chosen it as the topic for this essay.

HISTORY.—Perhaps the first observation on record which deserves mention is one by Müller, who, in 1860, discovered that the choroidal vessels of a certain case were filled with fluid fat which was supposed to have come from an atheromatous aorta. Two years later Zenker* found the pulmonary vessels, after injury, filled with fat, while at about the same time E. Wagner† found in many cases the capillaries of the lungs filled with fluid fat, and was therefore disposed, from the direction in which it extended in these vessels, to explain a certain number of pyæmic cases by the fat embolism, an explanation now known to be fallacious. In other words, this fat was supposed to have come from some metamorphosis of pus, and to be in some way connected with the presence of metastatic abscesses.

In 1864 Flournoy met with the following case:‡ A man was brought to the Königsberg Surgical Clinic with a simple transverse fracture of the tibia, caused by the kick of a horse. On the following day he complained of great weak-

ness, became comatose, and died thirty-six hours after the injury. Von Recklinghausen made the section, and found small ecchymoses in the brain, heart, skin, bladder, conjunctiva, and retina; hæmorrhagic infiltrations of the tibial marrow for an inch each side of the fracture, a clot between the fragments, and great œdema of the lungs. Microscopic examination revealed fat in the arterioles, capillaries, and veins almost throughout the body, especially in the lungs, where the obstruction must have been almost complete.

Stimulated by the findings in this case, Wagner and Busch both entered upon a thorough study of the subject. In 1865 Wagner published* his study of forty-eight cases in which he had found the lesions under present consideration, of which fifteen were cases of speedy death after injury. By this, as by Busch's† demonstrations with cinnabar injections into the marrow of injured bones, the subject was materially cleared up. Busch also collected forty-three cases from various causes—twenty-four from fractures, three from acute peri- and osteomyelitis, seven from endometritis and metrophlebitis, four from acute suppurations in soft parts, and the balance from miscellaneous causes, such as ulcers on the leg, etc.

Finally, Bergmann experimented with intra-venous injections of oil, and clearly established that fatty embolism of the lungs and pyæmic processes were distinct from one another, though in accidental cases they might be simultaneous.‡ We also owe much to the earlier labors and researches of O. Webber, Uffelmann,* Schwick,|| Buttletswi,^ and Niederstadt.¶

Since 1869 it has been met with so frequently abroad as to occasion little or no surprise, and it is only at home now that, if one may judge by current literature, its frequent occurrence is not yet generally appreciated.

FREQUENCY.—It is difficult to form an accurate estimate with reference to the frequency of occurrence of fat embolism, but it must occur to a slight extent in nearly every case of fracture and laceration. Numerous observers have shown how uniformly fat embolism of the lungs, at least, happens after extensive compound and multiple fractures. Moreover, the symptoms so much resemble and so often complicate those of shock, that Czerny has suggested that many deaths heretofore attributed to shock were really due to this kind of embolism, and, without doubt, this is the case, both for the past and even for the present. Flournoy and von Recklinghausen, studying the subject at Strasbourg, showed that slight diffuse fatty embolism was to be found in ten per cent. of a miscellaneous series of two hundred and sixty dead bodies.

* E. Wagner, "Die Fetteembolie der Lungencapillaren," *Arch. d. Heilk.*, 1865, pp. 146, 369, 481.

† F. Busch, "Ueber Fetteembolie," *Virchow's "Archiv,"* 1866, p. 321.

‡ Bergmann, "Zur Lehre von der Fetteembolie," *Dorpat*, 1863.

* A. Uffelmann, "Embolie der Lungencapillaren mit flüssigem Fett," *"Zeitschrift f. rat. Med.,"* 1865, Bd. 23, p. 217.

|| A. Schwick, "De embolia adipis liquido effecta," *Dissert.*, Bonn, 1864.

^ B. Buttletswi, "De embolia adiposa," *Regiomonti Pr.*, 1866.

¶ O. Niederstadt, "Ueber Embolie der Lungencapillaren mit flüssigem Fett bei Osteomyelitis," *Göttingen*, 1869.

* Zenker, "Beiträge z. norm. u. path. Anat. d. Lunge," 1862.

† E. Wagner, "Die Capillarembolie mit flüssigem Fett, eine Ursache der Pyämie," *"Arch. d. Heilkunde,"* 1862, Bd. 3, Heft 3.

‡ Flournoy, "L'embolie graisseuse," *Thèse de Strasbourg*, 1878.

In 1879 Sinclair* had found accounts of one hundred and forty reported cases, with a mortality rate of thirteen per cent. Of this total number, eighty-four were of fracture, with sixteen deaths.

ETIOLOGY.—We may sum up the following, in their order of frequency, as the causes which, in the vast majority of cases, lead to fat embolism:

Injuries to bones, of all sorts, especially simple and compound fractures.

Lacerations of soft parts, especially of adipose tissues.

Surgical operations.

Acute periostitis and osteo-mylitis.

Rupture of fatty liver.

Certain pathological conditions, such as fatty degeneration of thrombi, icterus gravis, and diabetes.

MORBID APPEARANCES.—"One only needs to cut off with scissors a small piece of lung raised by forceps and to spread it out in water in order to see larger and smaller streaks of capillaries, and even larger vessels, filled with the highly refracting fatty mass."† In fact, fatty infarctions may be sometimes clearly made out by the naked eye, particularly in the lower lobes of the lungs.

Oil-drops have been found in the interior of clots in the pulmonary arteries and right heart, and even in veins leading from the site of injury.

Echymoses of the organs most affected are often found, and these often are met with in close conjunction with the fatty infarcti. It is as if the blood, not being able to work its way through the natural channels, had broken down the tissues and thus escaped.

When sections of these tissues, lungs for instance, are placed under a low objective, their capillary network, which under ordinary circumstances would be invisible, is seen to be more or less distended and injected with fatty material or fat drops, and quite plain to the eye. This same appearance would characterize any tissues thus affected. Such sections should be cut from parts well hardened in alcohol or similar medium. Osmic acid in one-per-cent. solution both hardens the tissues and stains fat black; if, then, small portions of lung and other parts be kept in this solution, or sections be immersed in it before mounting, the vessels will appear as if injected with some black mass. Such a demonstration is most interesting and convincing. This may be made even more so by placing the sections so stained in ether, when these peculiar appearances should at once disappear.

PATHOLOGY.—Numerous observers have noted that during operations and after compound fractures oil-drops are frequently seen floating on fluid or semi-solid blood, and this fact might lead to the supposition that the fat could gain access to the pulmonary circulation only by way of the veins; but it has of late been shown that it may be absorbed by serous surfaces, and that the embolic disturbances entailed after a certain amount of fluid fat has been passed into the heart through the thoracic duct are none the less

genuine, though usually less rapid and disastrous.* It is probable that in such cases as these a certain amount of fat is detained in the glands.

Scriba, after a number of painstaking experiments, has been able to establish † the fact that the severity of the symptoms depends on the quantity of fat in the circulation, the rapidity with which it enters, and the proximity to the heart of its source; and, indeed, that the symptoms may become so violent as to resemble those of entrance of air into veins.

The part played in the etiology of fat embolism by *vis a tergo* has been well shown by Déjérine, ‡ who found that fatty emboli were produced in greatest number when laminaria tents were introduced into the medullary canal. This shows the effect of pressure, be it of blood extravasation, muscular contracture, or inflammatory swelling.

It has also been pointed out that since the fat of bone-marrow, as well as of adipose tissue, is contained in membranous sacs, or so-called fat-cells, these membranes must be ruptured before their fluid or semi-solid contents can escape. This allows the fat to gather in fluid, movable masses, a fact alluded to by Fenger,§ and which explains the alarming character of the symptoms. Fat embolism is, however, rare in children, because their skeletons contain so little fat—an important point to which Minich has called attention.||

While this fat does not cause inflammation, infection, nor sepsis, *per se*, the possibility of entrance of micro-organisms into the system *along with* the particles of fat should still be borne in mind, though I am not aware that this has ever yet been noted.

The conditions which, *par excellence*, predispose to fat embolism are:

Openings in the walls of the blood-vessels.

Presence of fluid fat in the neighborhood of the same.

A certain *vis a tergo*, usually pressure of extravasated blood, which tends to force this fat through these openings.

Not desiring to digress too far from the purely surgical features of my subject, I will here only stop to mention that Saundby and Barling have reported^A nine cases of severe injury, none of which survived more than two days and in all of which fat emboli were found in the lungs. In the course of this paper they also state that they found these emboli in a case of diabetes with milky blood; but, since the fat globules were found in the clots present in the vessels, it may be that they were of post-mortem formation and due to the running together of oil globules.

In this connection it may be worth while to state that in diabetes the blood serum has occasionally a milky character, and it has been shown that under these circumstances the blood contains a profusion of fine, oily globules or mole-

* Wiener, "Wesen und Schicksal der Fetteinbolie," "Arch. f. exp. Path. u. Pharmacol.," Leipzig, 1879, p. 275.

† Scriba, "Untersuchungen über die Fetteinbolie," Leipzig, 1879.

‡ Déjérine, "Note sur deux cas d'embolie graisseuse," etc., "Bull. de la soc. anat. de Paris," 1878, p. 473. Also "Gaz. méd. de Paris," 1879, i, p. 456.

§ Fenger, "Chicago Med. Jour. and Examiner," Dec., 1879, p. 587.

|| Minich, "Lo Sperimentale," March and April, 1882.

^A Saundby and Barling, "Jour. of Anat. and Phys.," 1881-'82, xvi, p. 515.

* Sinclair, "Ueber Fetteinbolie," "Correspondenzblt. f. schw. Aerzte," 1879, ix, 161, and "St. Petersburg. med. Wochsft.," 1879, Nov. 23.

† Orth, "Path.-anatomisch Diagnostik," Berlin, 1878, p. 167.

cules. Whether, then, the fat embolism observed after death from diabetes is owing to this fat already existing, or whether to some fresh source, is not known. At all events, the two conditions are very similar, and differ merely in their prime causes. We know that in a diabetic patient, dying comatose, fatty infarcti have been found in the lungs and kidneys, as also that a diabetic may die comatose, the blood showing quantities of molecular oil without a single appearance of fatty embolism proper.

Moreover, in a case of farcy reported by Bendall (Saundby and Barling, *l. c.*) the presence of fat emboli was clearly demonstrated, while a similar case, investigated by Boyd, gave negative results.*

From all of which we may then infer that fatty emboli may cause trouble under very diverse conditions, that we need never be surprised at finding them, and that the more carefully we search for them the oftener we shall find them.

It is a matter not only of interest, but of pathological importance, to trace, if possible, the destination of the fat which may thus have entered the circulation. With that which lodges in the pulmonary capillaries we have already made some acquaintance. That which is forced through them passes into the general circulation and may cause disturbance in the brain or cord, and thus affect the vital functions or cause motor and sensory symptoms. Or, more frequently, it is arrested in the liver, or in the glomeruli, whence it is excreted with the urine. In the latter case thin sections of the kidneys, properly stained, would show the vasa efferentia, glomeruli, and tubules filled with fat.

Particles thus arrested, instead of being excreted, may be forced into the veins again and thus establish a milder and secondary embolism of the lungs. When fatty emboli occur in the liver, it is probable that the hepatic cells take up a certain amount of it. In other cases, when the primary condition is not rapidly fatal, inflammatory processes may be set up in the lungs and brain as a result of ecchymoses and of the presence of emboli, as a case reported by Riedel† abundantly shows. One would naturally conclude, from a careful study of this case, that in the old and intemperate a graver prognosis should be given in cases of fatty embolism; their hearts are weakened and their power of resistance notably diminished. Indeed, there is reason to think that many cases of hypostatic pneumonia take their origin in this way.

Undoubtedly, then, fatty emboli may produce disastrous secondary effects.

SYMPTOMS.—General condition: Debility and malaise, rapidly increasing. Countenance pale, becoming anxious and then distressed, and at last the face is cyanosed, with pupils contracted. Reflex excitability is gradually lost. Patients are usually at first excited, then wildly or quietly delirious, then somnolent, and finally comatose. In rare cases, depending on the amount of cerebral disturbance, vomiting, spasms, or paralysis may precede death.

Respiratory Organs.—The respiration rate gradually increases from the normal up to fifty or even sixty to the

minute, breathing becoming stertorous. Dyspnoea, increasing in intensity until it becomes agonizing, sometimes marks these cases. Cheyne-Stokes respiration may also be observed in the earlier stages. At the last there may be foam, sometimes bloody, from the mouth, as in oedema pulmonum; or during the course of the symptoms there may be hæmoptysis. With the stethoscope large bronchial râles are heard, which change until they become tracheal.

Circulatory System.—The pulse is weak, frequent, and irregular, fluttering toward the close. The temperature range is by no means constant; usually it is at first below the normal, and may in some cases remain so; in other cases it fluctuates from hour to hour, and may vary from the normal by wide limits either above or below. In other words, its range is atypical.

The foregoing constitutes a brief summary of the more important symptoms, few of which are constant and none pathognomonic. If, however, along with these, fat or oil globules can be detected floating on the urine, the diagnosis may be easily made; and when the above symptoms are clear and a majority of them evident, and are accompanied by a history of accident or operation, we shall seldom err in diagnosing fat embolism.

As a rule, they set in within thirty-six to seventy-two hours after the lesion causing them. I had supposed that the case which I shall report at the close of this essay had developed the symptoms and run its fatal course in less than the shortest time on record, until later experience and a closer study of the literature of the subject convinced me to the contrary. A French surgeon (Déjérine) has reported a case fatal within seven hours; and, if my diagnosis of another case is right, which unfortunately I could not verify by autopsy, I was an interested spectator of a case that proved fatal in a little shorter time even than this.

DIAGNOSIS.—In general, the diagnosis is to be made by eliciting a history of violence or of operation, by the sudden and painless onset of the symptoms above given within the average length of time, by a lack of other and sufficient cause therefor save those furnished by a history of some lesion, by the negative result of ordinary physical examination, and by the absence of paralysis and of all the usual evidences of central lesions of the nervous system and of valvular disease of the heart. Uremia, albuminuria, and diabetes can be excluded by examination of the urine, while if oily globules are found upon it they will speak conclusively for fat embolism.

Inasmuch as it is usually in surgical cases that we have to encounter this condition, it is from other surgical affections that we shall most often have to differentiate it. The symptoms usually come on too rapidly for those of septic trouble, although I can imagine that a mild and non-fatal form of fat embolism might be mistaken for septicæmia. As distinguished from shock, there is this point to be noted: that, by the time the symptoms of embolic disturbance are at their height, all, or nearly all, shock should have subsided. Thrombosis, as from phlebitis, and embolism from other causes, may produce rapidly fatal results, and here is the diagnostic sign in that they are usually fatal in less time than fatty emboli require to lead to the same result.

* "London Med. Record," November 15, 1862.

† Riedel, "Deutsche Zeitschrift. f. Chirurgie," 1877, viii, p. 572.

With a proper appreciation of the possibilities and probabilities of its occurrence, fat embolism is not likely to be overlooked very often, and when it is it will be in those fortunate cases where recovery follows and the question of diagnosis is, if possible, one of minor interest.

PROGNOSIS.—This must be in proportion to the extent of the injury, the proximity of the lesion to the heart and lungs, and the general condition, age, and physical characteristics of the patient. In extensive lacerations and fractures there are greater possibilities for entrance of fat into the circulation, as well as for constant increase of the amount.

Realizing that a slight amount of fat embolism occurs in almost every fracture in adults, we shall be prepared to understand the symptoms of restlessness, slight agitation, respiratory and circulatory disturbance, which can often be noted by a careful observer after a simple fracture, and understand their exact import while still waiting confidently for a speedy cessation of the same.

But, when the symptoms become severe, a most guarded and, generally speaking, unfavorable prognosis must be given. If the heart can be given sufficient vigor and endurance to continue pumping the blood with its burden of fat through the pulmonary capillary circulation, then the most imminent danger may be escaped. This it may do until either the capillaries of the brain become stopped up and its source of motive power thus paralyzed, or until the general capillary circulation is similarly obstructed, when it must finally stop, incompetent for the task.

DURATION OF SYMPTOMS.—The duration of the grave symptoms may vary considerably. When the capillaries of the brain become quickly plugged, death will take place more rapidly than when the lungs are chiefly affected. In the former case a few hours—two to six—may end the patient's life. If the circulation through the lungs be most at fault, the patient may die in from six to forty hours. When well-marked evidences of fat embolism are present, but are followed by recovery, the worst of the trouble will probably be over within forty-eight hours after it began.

TREATMENT.—Obviously the proper treatment will be to augment by every judicious means the power of the heart to force the load of fat through the venous and into the arterial system. If this can be done, the fatty matters will probably be emulsified or saponified by the alkalies in the blood.

The more the fractured or injured part is disturbed, the more fat will presumably enter the circulation. Consequently the injured part should be kept absolutely at rest. When a case of injury is complicated by delirium tremens, this is much more difficult, and may even justify the use of opiates when they would otherwise be contra-indicated. At all events, immobilization is always indicated as a precautionary measure.

As concerns internal treatment, the most powerful cardiac stimulants are called for—e. g., alcohol, digitalis, strychnine, ether by the mouth or under the skin. In fact, in this as in other respects, treatment must be symptomatic. On purely theoretical grounds, I should be strongly inclined to suggest the administration of oxygen, by inhalations of the gas, as strong as could be well borne.

DANGERS OF FAT EMBOLISM AFTER OPERATIONS.—I have excellent personal reasons for thinking that this is an important point to be considered in summing up the dangers of certain operations. Vogt has particularly called attention to the danger of fat emboli after resections. Alluding to the studies of others, and the report of a fatal case by Lücke,* he rehearses in detail a case of his own.† In this case—a knee—the bone substance was found to be in a condition of extreme fatty degeneration. He therefore deduces the lesson that when, in resecting bones and joints, we find the bone in this condition, and when, as in case of the knee joint, we want to bring bone-ends in close apposition, there is the greatest necessity for establishing unusually free drainage, and that, if circumstances make this impossible, we must proceed at once to amputate.

Besides the cases which I shall report below, I would refer the student of the literature of fat embolism to cases reported, among others, by Czerny,‡ Riedel,§ Scriba,|| Pinner,^ Zwicke,◇ Boettscher,‡ Socin and Burckhardt,‡ Fenger,‡ Fitz,** and Southam ††; also to the following works of reference: "Deutsche Chirurgie," Lfg. 3, p. 265; Holmes's "System of Surgery," 3d ed., London, 1883, vol. i, p. 427; "International Encyclopædia of Surgery," vol. i, p. 371; Stimson's "Treatise on Fractures," p. 133; "Index-Catalogue of the Library of the Surgeon-General's Office," vol. iv, article *Embolism* (Fatty).

Cases I and II I report with some hesitation, since the diagnosis was not verified post mortem, and yet there is not the slightest doubt in my own mind that they properly belong here.

CASE I.—A young woman was operated on for caries of the ankle. The course of the disease prior to the operation had been very chronic. The operation itself did not differ in any way from the average, and recovery from the anæsthetic was prompt and satisfactory. On the morning of the third day she was found unconscious in bed, and she died comatose in a few hours. I am reporting this case from memory, as it occurred at a hospital of which I was then an interne. This was before the matter of fat embolism had ever been broached in an American journal, so far as I know, and it is not strange that an autopsy, made by one of our own number, failed to clear up the mystery of her death, for we found nothing which at the time appeared to us wrong; still, her case is yet fresh in my mind, and, as I recall her symptoms clearly, I am as sure as I well can be that, without question, it should be placed in this category.

CASE II.—During the past winter I was present at an operation for removal of a cancerous breast from an extremely fleshy woman. The operation was made by one well qualified to undertake it, and passed off without anything unusual transpiring, except, perhaps, that it was somewhat prolonged. The

* "Centrblt. f. Chirurgie," 1879, No. 44.

† *Ibid.*, 1883, No. 24.

‡ "Berliner klin. Wochschrft., 1875, Nos. 44, 45, and 1878, No. 47.

§ "Zeitschrft. f. Chirurgie," viii, 572, and xiii, 371.

|| *Ibid.*, xii, 118.

^ "Berliner klin. Wochschrft.," 1883, No. 13.

◇ "Deutscher med. Wochschrft.," 1883, No. 32.

‡ "Dorpat. med. Zeitschrft.," 1877, vi, 326.

‡ "Jahresbericht u. d. chirurg. Abtheil. d. Spitals zu Basel," 1881.

§ *Loc. cit.*

** "Boston Med. and Surg. Jour.," 1876, p. 192.

†† "Lancet," July 10, 1880.

gland was imbedded in adipose tissue, and I noted both that venous oozing was free and that the fatty tissue crumbled readily under the sponge, and even seemed to melt down. The operation was begun about half past ten. The lady never became completely conscious, and died comatose about five o'clock, with nearly every symptom that I have detailed above. I am well aware that in this case the trouble may be ascribed to the anæsthetic, and with some reason; and yet, all things considered, I hold that the case can be properly classed as fatal from fat embolism. Unfortunately, autopsy, which might have cleared this all up, was denied.

CASE III.—Vito Pasuento, aged forty-one, laborer. While working for the Wabash Railroad, October 18, 1882, he was thrown from a car to the ground and, in some way never made quite clear, was badly injured. The injury took place at 8:30 A. M. Owing to its occurrence out on the road, he was not seen by any medical man until 1 P. M. At this time he was seen by some country physician, who did nothing for him (nor had anything been done in the mean time), except that he was laid on a rudely devised bed in order to be sent to Chicago on the first train. Arrived in that city, as the company's surgeon, I had him taken at once to the hospital, where he was admitted about 9 P. M. During these thirteen hours he had received a little nourishment, but no further attention save that one of his fellow-laborers had rudely tied a handkerchief around the worst injured limb. At no time had he had any gentle handling, but rather such as a carcass might receive.

At 9 P. M. I anæsthetized him with the alcohol, chloroform, and ether mixture I was in the habit of using at the hospital. I found a simple fracture of the right tibia an inch and a half below the knee, also a compound fracture of the left femur at about its middle, with a most extensive laceration extending from this height down to the inner side of the knee, extending down to but not into the joint. These injuries I treated in the conventional way, immobilizing the limb and establishing free drainage. The patient rallied from the anæsthetic only partially, fell into a deep sleep which by midnight became coma, and died at 4 A. M., twenty hours after the injury.

Section, Twelve Hours after Death.—The only points of special interest here are that, aside from fatty degeneration of the heart and fatty infiltration of the liver, both to very moderate extent, the picture of fatty embolism, as given above under the head of "morbid appearances," was complete. Fluid fat floated out on the blood after opening the heart, and sections of the lungs, placed under the microscope, showed profuse fatty injection of the capillaries.

CONCLUSIONS.—In the light, then, of these and numerous similar cases, and of careful experiments and pathological investigations, we are justified in formulating the following conclusions:

1. Fat embolism in varying degrees of severity is not an uncommon complication of surgical accidents and operations.
2. It may be so mild as to be lost sight of in the general condition of shock, or, perhaps, more properly speaking, it is one factor of a condition of prolonged shock.
3. Our knowledge of the subject will be greatly increased when we appreciate the possibilities of its occurrence and observe our cases more closely, watching for the appearance of fat in the urine, of slight dyspnœa, etc.
4. When prostration and loss of blood have been great, a moderate amount of embolic disturbance of this kind may serve to turn the scales against a patient who would have otherwise recovered.

5. By a proper understanding of this subject certain deaths may be explained which otherwise seem inexplicable.

6. Treatment can only be symptomatic, but may accomplish something.

7. Autopsies should be so conducted as to reveal this condition when present.

305 DELAWARE AVENUE, BUFFALO, N. Y.

A PAROVARIAN CYST WITH A TWISTED PEDICLE, ATTENDED WITH PERSISTENT UTERINE HÆMORRHIAGE.

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For the history of the following case, prior to the patient's entering my service at the New York Infirmary, I am indebted to Dr. Annie S. Daniel, physician to the outpatient department, under whose care the patient had been:

A girl, sixteen years of age, of German parentage, had an attack of chorea four years ago, and the affection lasted two years. Since that time she has been very nervous, and has had occasional convulsions, not attended with loss of consciousness. She first menstruated at the age of fourteen. During the first year the flow was regular and painless. Last summer there was suppression of the menses for nine weeks, and this was followed by a profuse flow. Since that time her menstruation has been too frequent and profuse. Four weeks since there was severe hæmorrhage, and from that time there has been no complete cessation. One week ago the physician in attendance found it necessary to tampon the vagina, owing to the excessive loss of blood at that time.

Dr. Daniel saw the patient for the first time March 20th. The girl then presented the following condition: She was excessively pale, and complained of extreme weakness; apart from this, there were no symptoms, save that of uterine hæmorrhage. On examination, the vagina was found filled with clots. The external os was open, and there was a tumor in the median line, reaching half-way to the umbilicus. There was no sensitiveness of the abdomen, nor of the pelvic organs, and there was no odor to the discharge. The lungs were normal. There was a systolic murmur at the apex of the heart, with a loud hum in the jugular veins. The urine was normal. The bowels were very much constipated. She was taking but little food.

The treatment at this time consisted in efforts to arrest the hæmorrhage, for which purpose ergot and gallic acid were given and the hot vaginal douche was employed. An enema was also given, to move the bowels. For some hours after a copious stool there was a diminution of the uterine flow, but again, on the 24th, there was a profuse hæmorrhage, with the escape of enormous clots. On the 25th the girl fainted as she was moved from the bed, and, on recovering, she had convulsive movements of the arms and legs; her eyes were wide open, her neck was rigid and retracted, and her breathing was stertorous. This condition lasted for about an hour and a half, when it passed off, the treatment having consisted in the application of a sinapism to the nape of the neck and the administration of spiritus ætheris compositus.

On the 26th the patient was sent into the infirmary, and on the following day I saw her for the first time. There had been quite a profuse flow during the preceding night, and for the first time the temperature was elevated, being 100.3° F. The pulse was 110. The girl was completely blanched, and the pulse was

rather feeble. On vaginal examination, the external os was found open, admitting the finger readily, and the uterus was apparently as large as in pregnancy at about four months and a half. The rather peculiar softness of the tumor that was felt led to a very careful examination. The mass occupied a position exactly in the median line, and pressure on it gave an impulse to the finger upon the cervix, while movement of it in any direction caused a corresponding movement of the uterus, as ascertained also by vaginal touch.

As the girl, on being questioned, admitted the possibility of pregnancy having existed, it was presumed that some abnormal result of this condition was present; and, as the hæmorrhage had been so profuse, and had continued so long a time, the question was not so much of an existing pregnancy as of some product of a conception which had taken place during the previous summer, from which time the hæmorrhage dated. The introduction of a sound threw no light upon the matter; it entered only three inches. Still, the tumor felt could not in any way be separated from the uterus. The examination was made very carefully, as has been stated, because of the peculiar softness of the organ, which had raised a doubt as to the character of the trouble with which we had to deal. It was inferred, as a result of said examination, that we had to do either with a uterus which still contained a product of conception, of a few months' standing, which, having become organized, formed an obstacle to the admission of the sound; or with a fibroid of the fundus which had undergone cystic degeneration and, as is not infrequently the case, was accompanied by fungosities, which would explain the hæmorrhage. The indications for treatment were, in our judgment, to dilate the uterus, ascertain the cause of the exhausting hæmorrhage, and, if possible, remove it.

On the 29th three very small laminaria tents were introduced. It was impossible to pass more through the internal os. The tents were introduced with all the necessary antiseptic precautions. They had been placed in a solution of carbolic acid (1 part to 8 of glycerin), and, after being rinsed from this, in a 1-to-20 solution, from which they were carried into the uterine cavity. The vaginal tampon was carbolized with a 2.5-per-cent. solution. The next morning, after the removal of the first tents, four larger ones were readily introduced, the same precautions being resorted to. On the afternoon of the same day the patient was etherized, and the tampon and tents were removed. As the latter were withdrawn from the uterus, the internal os contracted so rapidly as to resist the removal of the last one. Exploration with the finger was, of course, impossible, but a blunt curette was introduced, in order to ascertain if fungosities were present. It entered to the depth of three inches, and, meeting with no obstacle, was drawn over the surface of the endometrium and withdrawn, without any result. A small silver probe was then introduced, in order to ascertain whether it would not enter farther into the uterus, possibly past some projection into the cavity preventing a correct estimate of its length—but with no more satisfactory result. The diagnosis remained, therefore, incomplete, and the cause of the hæmorrhage still a mystery. No further efforts were made to expand the uterus, as the condition of the patient did not justify it. She did not rally very well from the anesthesia; she vomited incessantly, and could not retain either food or stimulants. Attempts to give nourishment by the rectum were not more successful, and soon a diarrhoea set in which occasioned several stools during the night.

The next morning the patient was extremely weak; her hands were cold and covered with sweat; her pulse was 130, feeble and irregular, and her temperature was 97°. Nutritive enemata were again tried, and brandy and morphine were given hypodermatically. The enemata were retained until 2 P.M.,

when food was again given by the mouth. For two hours it was retained; then vomiting again set in, and the bowels began to move still more frequently. From this time there was an occasional rallying from this desperate condition, when the pulse would become a little stronger, but there was a progressive decline until April 1st, when the patient died. On the previous evening the temperature rose to 104° and the pulse to 180. She was at no time unconscious, nor was there pain at any time; on this day the vomiting and purging were almost constant. Until about fifteen minutes before death the respiration was but slightly altered; from that time it was very labored.

Post-mortem Examination, nine hours after death.—On opening the abdomen, a sac was discovered, lying just above the pubes, and presenting somewhat the appearance of a distended bladder. On carrying the hand down into the pelvis, the uterus could not be detected at first, but was eventually found to be so completely capped and covered in by the cyst which lay upon it as to seem a part of the latter. Further investigation proved the tumor to have its origin in the right broad ligament, and its pedicle to be formed by the broad ligament with its vessels. The Fallopian tube was twisted twice upon itself quite close to the uterus, and thus the cyst was turned over upon this organ in such a manner that the tube crowned its upper surface, extending from right to left, while the uterus fitted into a depression in its elastic walls.

The ovary of the same side had undergone cystic degeneration, and was of about the size of a walnut. The left ovary was normal. The peritonæum was healthy. The abdominal organs were extremely pale, but otherwise healthy.

At the apex of the right lung there were numerous old adhesions. The entire lungs were very oedematous. The heart was normal in size, but its tissue was very pale, and the mitral valve was thickened and insufficient. There were fibrinous clots in both ventricles, the one in the right cavity extending far into the pulmonary artery. On section of the uterus, the lining membrane was found thickened and intensely congested, but otherwise healthy.

The points of interest in this case are:

1. The question as to the cause of the hæmorrhage.
2. The difficulties in diagnosis.
3. The cause of the speedy death after the introduction of the tents.

In regard to the first, as has been stated, the lining membrane of the uterus, although thickened and intensely congested, bore no trace of a placental surface; indeed, the history of suppression of menstruation for three months, followed by a profuse flow, dated from the previous July, and, had pregnancy then existed, sufficient time had elapsed for all traces of it to disappear. Fungosities, so frequently found as a cause of similar losses of blood, were also looked for in vain. There was, therefore, nothing in the uterus to account for the hæmorrhage.

The examination of the heart revealed a moderate degree of insufficiency of the mitral valves, but evidences in other organs of disturbance of the circulation from this cause were entirely wanting, and it would certainly not account for the uterine hæmorrhage.

It seemed at first, therefore, as if even the post-mortem would give no aid in determining the diagnosis. On further consideration, however, the thought was suggested that in the twisting of the pedicle of the tumor might be found the explanation of the main symptom. A careful examina-

tion of the uterus and tumor, which had been removed together, showed that the entire broad ligament was so stretched as to admit of this twisting upon itself, and that in its turns were included the Fallopian tube and numerous blood-vessels. The former, below the twisting, was enlarged, when inflated, to the size of the index-finger, and the latter also were very much dilated. As these vessels belong to the pampiniform plexus, and as the return blood from the upper part of the uterus is received by them, the twisting above mentioned must have seriously interfered with this return current, and so, by inducing a very extensive degree of congestion of the organ, have favored the persistent hæmorrhage from its mucous surface. It seems, at least, very reasonable, in the absence of any other explanation, to account for it in this way.

The writer is aware that similar twisting of the pedicle in ovarian tumors, even to the extent of so interfering with the nutrition of the growth as to cause gangrene, is not accompanied by the symptom present in the case related, and this may give rise to a doubt as to the twisting of the pedicle having been the cause of the hæmorrhage. It must be taken into consideration, however, that the ovary, although situated in such close relation to the broad ligament, must, as it becomes pediculated, only take to itself that portion which distinctly belongs to it, and which would include only the ovarian vessels, leaving those of the uterus free in front of and below it. In a tumor of the broad ligament things may be quite different, as in the case recorded, where it was developed in such a way as to involve a great part of the ligament, as shown by the Fallopian tube occupying a central position above the tumor, which spread out on both sides of it. In such a case the pedicle would be composed of a greater part of the broad ligament itself, and would necessarily involve all the vessels contained in it. This twisting, which might not interfere with the arterial supply of the organ, might, nevertheless, owing to the diminished resistance of the veins of this great plexus, very seriously impede the return current from the uterus, and so result in hæmorrhage.

It may seem strange that the tumor was not readily distinguished from an enlarged uterus, for which it was mistaken. This error, however, will admit of explanation. The growth occupied a precisely central position, and was so closely adapted to the uterus that it was impossible to separate the two during life; indeed, any movement of the one imparted a similar movement to the other. Even when the patient was under the influence of ether, the most careful manipulation failed to distinguish the growth from the organ which lay beneath it. The fact that the measurement of the cavity of the uterus did not agree with the dimensions of the mass as ascertained by conjoined manipulation, as well as the fact that there was a peculiar softness about the tumor, only pointed to the probability of its having been developed in the upper part of the uterus and undergone cystic degeneration. It is believed, indeed, that nothing short of abdominal section would have thrown light on the true nature of the case with which we had to deal.

In regard to the cause of death: while at first sight the history of the case after the introduction of the tents may

point to them as the main factor, and while the danger of septicæmia from the use of these indispensable instruments in gynæcological practice must be admitted, still, a careful study of the case in question has led to a different conclusion. In the first place, all antiseptic precautions were taken, and, in the very large experience of the writer in the exploration of the uterus by means of tents, no harm has ever resulted where such precautions had been regarded. Moreover, the post-mortem gave no evidence of trouble in the pelvic vessels or lymphatics, nor was there any irritation of any portion of the peritonæum.

It becomes necessary, therefore, to seek for the explanation elsewhere. The girl was anæmic to the last degree, as a result of the repeated hæmorrhages—hæmorrhages at times so profuse as to require tamponing of the vagina. On the day previous to any operative procedure the temperature showed a slight elevation, and the pulse was quickened, pointing to beginning trouble of some kind, possibly the initial stage of irritation on the part of the gastro-intestinal tract, which afterward became very severe. From the time of the first introduction of tents the stomach absolutely refused to retain even the slightest nourishment, and within twenty-four hours an uncontrollable diarrhœa had set in. This circumstance, added to the condition of profound denutrition already existing, could not fail to be most serious in its results. No doubt there was a predisposition to this disturbance on the part of the gastro-intestinal tract, as an effect of defective assimilative function due to the anæmia, and, when it finally became pronounced, it so greatly aggravated the already desperate state of things as to remove all chance of recuperation.

Book Notices.

A Treatise on Ophthalmology, for the General Practitioner. Illustrated. By ADOLF ALT, M. D. Chicago, St. Louis, and Atlanta. J. H. Chambers & Co., 1884. Pp. xvi-244.

DR. ALT adds another to the constantly growing list of treatises on ophthalmology for the general practitioner, and, on the principle that the supply is regulated by the demand, there would seem to be a place for it in medical literature. The work consists of about two hundred and fifty pages, printed in fine large type on good paper, but the illustrations, which are quite numerous, are most of them poor, and many of them very poor—quite unworthy of the text. The contents are divided into twenty-six chapters, in which the author has aimed to give the general practitioner a clear idea of the principles of ophthalmology, and to guide him in deciding how far he may with safety treat any given case of disease of the eye, and when it will be necessary to call in the aid of a specialist. The descriptions of disease are generally clear and concise, and in the matter of therapeutics thoroughly sound and abreast with the most recent prevailing ideas of modern ophthalmology. This was to be expected from the author's general reputation. It is much to be regretted that the value of the work is so much detracted from by the cheap and unfinished character of the illustrations. This is especially noticeable in the chapters on diseases of the eyelids and conjunctiva, and in some of the illustrations of fundus disease. We are glad to see how decidedly and clearly the

author distinguishes between membranous and diphtheritic conjunctivitis as two distinct diseases, though the treatment for both may be the same. On all points of pathology Dr. Alt is especially strong. The chapter on diseases of the eye due to other diseases of the general system is a judicious exponent of certain modern views held by ophthalmologists, which it is very important that the general practitioner should understand. We can but add that the practitioner will get nothing but sound advice from a perusal of the book.

Clinical Demonstrations on Ophthalmic Subjects. By J. R. WOLFE, M. D., F. R. C. S. E., Senior Ophthalmic Surgeon to the Glasgow Ophthalmic Institution, etc. With Illustrations. London: J. & A. Churchill, 1884. Pp. 54.

This little brochure is divided into four parts, which treat, respectively, of transplantation of conjunctiva from the rabbit to the human subject; transplantation of skin-flaps from distant parts without a pedicle; an operation for the cure of detachment of the retina; and tubercle of the iris and ciliary body. All the articles have been published before at different times and in different journals. The first and second are the most important, and are both illustrated with woodcuts and photographs. In the second article, on the transplantation of skin-flaps without a pedicle, the author emphasizes the importance of freeing a skin-flap of all areolar tissue and of properly fixing it in its new place, if we wish it to adhere to a new surface by first intention or agglutination. He avoids all irritant substances in the dressings, such as carbolic acid, and deprecates the use of goldbeaters' skin. He uses no sutures, but molds the flap into position. In the third article, on detachment of the retina, Wolfe advocates the paracentesis of the sclera at a point corresponding to the site of the detachment. The lips of the conjunctival wound are separated with strabismus-hooks, and, to guard against rotation of the eyeball, he has devised a sort of steel thumb, which is put upon the index-finger of the left hand of the operator, and the point, which is provided with a stop, is pushed through the conjunctiva and sclera and keeps the eye steady. The sclerotome is withdrawn slowly, and gentle pressure is made upon the eyeball in the track of the receding lance by means of a fine spatula. The lips of the external wound are then brought together with a fine silk suture, and both eyes are strapped with court-plaster. The patient is kept in bed in a dark room for three days, and the dressing removed on the sixth day. The author has had excellent results in a number of cases. The little book is an interesting contribution to practical ophthalmic surgery.

The Refraction of the Eye. A Manual for Students. By GUSTAVUS HARRIDGE, F. R. C. S., Assistant Surgeon to the Westminster Ophthalmic Hospital. With Eighty-seven Illustrations. London: J. & A. Churchill, 1884. Pp. xi-204.

THE author has here presented to the medical profession an admirable little work on a somewhat abstruse subject, of practical value, though we question the wisdom of relegating the examination of cases of errors of refraction, and the prescribing of glasses, to the general practitioner. "No book, nor even the knowledge gained by watching others who are thus employed, can take the place of the dexterity acquired by practically working out a large number of cases of refraction." These are the author's own words, and, from the nature of things, such practical dexterity can only be acquired by the specialist. The opening chapter, on optics, is brief but well written, and very necessary to a proper understanding of the subject, for its details underlie the whole subject of refraction. It is gratifying to find in this work a thorough adoption of the metrical system

of numeration, which has met with so many obstacles to its introduction into general use. There is a chapter on retinoscopy, which term the author proposes to change to umbrascopy, as a better term. The illustrations are numerous, and most of them good, though it is difficult to convey a proper idea of the fundus of the eye by a woodcut, no matter how carefully made. The work also contains a set of Jaeger's test-types, a set of Pray's test-types for astigmatism, and a set of test-letters for distant vision. The type and paper are excellent.

A New Method of treating Chronic Glaucoma, based on Recent Researches into its Pathology. By GEORGE LINDSAY JOHNSON, M. A., M. B., B. C. Cantab., etc. With Illustrations. London: H. K. Lewis, 1884. Pp. 48.

THIS little book of fifty pages is an elaboration of a graduation thesis, in which the author seeks to establish the proposition that "the ordinary method of treatment for glaucoma by iridectomy, though highly successful in acute forms of the disease, is, nevertheless, both uncertain and unsatisfactory in chronic glaucoma." He reviews the recent advances made in the pathological anatomy and physiology of glaucoma, and concludes the second part of the work with a series of eight propositions, to the majority of which most working ophthalmologists will agree. He maintains that the reason why iridectomy fails in chronic glaucoma is because the primary obstruction depends on slow and gradual changes in the ciliary body and the tissues round the angle of the chamber, by which the connective tissue becomes increased, and, contracting, tends to narrow and imprison the lymph-spaces and to firmly tie down the iris against the contiguous cornea, so that to remove the iris up to its root becomes an impossibility. Johnson recommends a long paracentesis of the sclera with a double-edged modified Wenzel's knife. The point of the knife is entered about 4 mm. behind the sclero-corneal junction, and should penetrate nearly half an inch, the flat side of the instrument lying somewhat obliquely to the long axis of the eye. The knife is to be withdrawn with care. The eye is then bandaged until the wound has healed. The statistics of this operation, in the hands of Johnson and some others, justify all that is claimed for it. The little book has several illustrations, and is an interesting contribution to ophthalmic literature.

The General Practitioner's Guide to Diseases and Injuries of the Eye and Eyelids. By LOUIS H. TOSWILL, B. A., M. B. Cantab., M. R. C. S., Surgeon to the West of England Eye Infirmary, at Exeter. London: J. & A. Churchill, 1884. Pp. viii-147.

THIS little volume treats only of those diseases and injuries of the eye which are commonly met with by the busy general practitioner, and is in its main points to be commended, though objection might with propriety be taken to the advice given by the author, in speaking of purulent ophthalmia, to apply from four to six leeches to the temple or brow; they do very little good, and may do harm. Another objection might be made against the continued use of the barbarous term *corneitis* in place of *keratitis*. The treatment recommended for the various inflammatory diseases of the eye and eyelids is sound, and the author is wise in advising that all cases of operation upon the eye be referred, so far as possible, to the ophthalmic surgeon.

BOOKS AND PAMPHLETS RECEIVED.

Manual of Physiology. A Text-book for Students of Medicine. By Gerald F. Yeo, M. D., etc., Professor of Physiology in King's College, London, etc. Philadelphia: P. Blakiston, Son & Co., 1884. Pp. xxiv-17 to 749, inclusive.

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NEW YORK, SATURDAY, AUGUST 16, 1884.

RAILWAY SURGERY.

It can not be denied that, in many of the paths that lead in the direction of progress, our brethren in the Western States leap where we of the East crawl. We have before had occasion to allude to this state of things as it concerns medicine, and have recognized the quickness of perception and the promptness of action which led to the establishment of the first school for the instruction of graduates in one of the Western cities. Our attention is now again drawn to the fact by the contents of a modest *brochure* entitled the "Proceedings of the First Three Meetings of the Surgeons of the Eastern Division of the Wabash, St. Louis & Pacific Railway." The three meetings were held, respectively, at Decatur, Ill., January 25, 1882, at Fort Wayne, Ind., June 4, 1883, and at Springfield, Ill., April 30, 1884. Although the proceedings at all these meetings are given within the compass of not many more than a hundred octavo pages, they include a number of papers of the very highest practical value, all treating of matters more or less closely connected with the care of persons injured in railway accidents. In another department of this issue of the "Journal" we give full abstracts of two of these papers, and should have been glad to give the substance of others of them but for the fact that our space was limited. As it is, we can only express the hope that a large enough edition of the "Proceedings" has been published to insure its coming into the possession of a great portion of the profession throughout the country, for we feel assured that no general practitioner who is at all likely to be called upon to render his professional aid in the class of injuries to which it is devoted—and there are but few indeed of our number who are exempt from such a liability—can fail to realize, after its perusal, that his hands have been strengthened.

It is well known to surgeons of large experience that, even from a strictly surgical point of view, railway injuries present features of marked contrast to those which, in every other respect than their cause, seem to the inexperienced to be their counterparts. When to this are added the complicating conditions involved in the shock almost if not altogether peculiar to them, and the frequent necessity of transporting the wounded under difficulties—both of which conditions are admirably treated of in the papers of which we give abstracts—it will readily be seen that railway surgery may be looked upon as in some sort a special branch of our art. That being the case, it is not easy to over-estimate the good to be accomplished by just such conferences as those held at the three meetings in question. The gentlemen who met on those occasions were the surgeons regularly employed by the company, or the associated system of companies, that controls and manages the railway

service of a vast territory; and, organized as they are, it would not be forcing an inference to conclude that they represented an amount of experience in railway injuries unapproached by that of many more than their own number of practitioners elsewhere.

We understand it to be the case that our more important railways here at the East have not wholly neglected to make something like a systematic provision for prompt and adequate medical service in emergencies, but we fear it must be admitted that in many instances an accident attended with the injury of passengers or employees brings up in the official mind little else than these two considerations: how to pack off the sufferers with all possible speed, and with little concern for their comfort and scant precautions to favor their ultimate recovery, to the nearest hospital; and how to give the facts in the case such an aspect as to throw obstacles in the way of a suit for damages. We are aware that one of our companies has done something in the way of furnishing its trains with a stock of the more ordinary surgical appliances, but we have no knowledge that in this part of the country there is any provision at all comparable to the organized medical service of the Wabash, St. Louis & Pacific Railway. Even if it is true, however, that "it pays better to transport hogs than men," as one of our railway magnates was once reported to have remarked, the time may not be far distant when passengers who have to choose between rival lines may take into account the relative advantages of being treated, in case of injury, as if they were of less importance than hogs, save for their constitutional right to sue, and, on the other hand, of meeting with the tenderness that is so heartily inculcated in the salutatory address of the president of the Surgical Association of the Wabash, St. Louis & Pacific Railway, Chief Surgeon J. T. Woods, of Toledo, Ohio.

It seems that Dr. Woods is to be credited with having conceived the idea of such a service, and with having persevered, in the face of no slight obstacles, to the final accomplishment of its organization. In the address to which we have alluded he gives an account of some of the difficulties with which he had to contend, and this feature of the address appears to us second only to the philanthropic spirit which pervades it. The first impediment that he had to overcome was the natural disinclination of a corporation organized for the purpose of money-making to engage in an undertaking involving an expense difficult to estimate, one that it was under no legal or other apparent obligation to engage in, and one that, it was feared, might lead to imposition and abuse. In the light of such considerations the company's hesitation certainly was not altogether irrational, especially when it was remembered that more or less system had been attempted elsewhere, but the work had proved so desultory and unsatisfactory, and finally so expensive, that, as Dr. Woods says, it had usually either gradually dropped to pieces or been suddenly abandoned, as was the case on the whole system controlled by Mr. Vanderbilt, in which the company now took no care of any one, and medical men who served the injured had to look to the patients for their pay—the maimed men who had not the means, however well disposed.

It is in the highest degree creditable, both to Dr. Woods and to the president of the Wabash, St. Louis & Pacific Railway, that these arguments were not long allowed to stand in the way of the project, but that an arrangement was agreed upon which recognized that "the quality of mercy" had a legitimate place even in business transactions. There can be no question that the loyalty of the employees has been strengthened by the successful working of the plan, and it is safe to assume, we think, that the stockholders' profits have not been lessened by it.

Among the other difficulties encountered by Dr. Woods was the distrust with which the employees at first looked upon the surgeons who were selected for the service—a feeling which can only be regarded as the natural expression of every man's preference for choosing his own doctor; but gradually as the men found that the surgeons had been appointed with great discrimination, and that their reputation was of the best in their respective communities, this feeling vanished. This result was due to the success with which another problem had been solved—that of selecting proper men to serve as surgeons to the line. Although a disposition was encountered in some quarters to introduce local professional animosities, Dr. Woods succeeded so well in this delicate part of his task that he was able to say in his address that he did not believe that, as a whole, better professional men had ever served an organization. Judging by the admirable papers which they read at the meetings, whether considered merely as contributions to the art of railway surgery, or regarded as tests of their devotion to the objects of the organization and to the broad claims of humanity, we can not entertain the slightest doubt that his words were justified, and we trust that his association will prove the parent of many others of the same sort.

MINOR PARAGRAPHS

ST. MARY'S GENERAL HOSPITAL, BROOKLYN.

THE first annual report of this institution, although only a pamphlet, contains a good example for the older hospitals in the fact that it makes a very creditable attempt at giving the reader some insight into the practice of the house, as shown in brief reports of cases, with comments, from the various special departments of the hospital, and in the statistical tables appended. The result is that the report is of interest to members of the profession in general. Within three months of the time the hospital opened its doors it was so unfortunate as to meet with evidence of the effects of sewer-gas on its patients, but it is gratifying to learn that the city authorities came promptly to the rescue, and that, the defective sewer connections having been remedied, there has been no further trouble on that score. Young as it is, having been in operation only since the close of the year 1882, the hospital seems remarkably well equipped, and gives promise of a high degree of usefulness, not only to the sick poor, but to the medical profession.

NEWS ITEMS, ETC.

Yellow Fever in Mexico.—Notwithstanding the occurrence of a few cases of the disease in Mazatlan during the months of May, June, and July, the sanitary officials of that port give clean bills of health to vessels touching there, and masters of steamers bound to American ports are therefore warned by the

Washington correspondents of the associated press to take proper precautions on calling at Mazatlan.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending August 12, 1884:

DISEASES.	Week ending Aug. 5.		Week ending Aug. 12.	
	Cases.	Deaths.	Cases.	Deaths.
Typhus	1	1	0	0
Typhoid Fever	22	6	24	7
Scarlet Fever	37	5	33	3
Cerebro-spinal meningitis	3	3	3	3
Measles	84	20	62	14
Diphtheria	26	9	26	13

Cholera.—The epidemic on the French Mediterranean shore has continued to decline during the week, and there seems reason to entertain the hope that it may not now overrun a great extent of country this season, although it has spread to several Italian towns.

Small-pox, according to the "Medical Times and Gazette," is reported to be prevailing to an alarming extent at the diamond-fields of South Africa.

The Canadian Medical Association is to hold its annual meeting in Montreal on Monday, Tuesday, and Wednesday, the 25th, 26th, and 27th inst. The "Union médicale du Canada" learns that the following-named papers are to be read: Burns and their Consequences, by Dr. Gardener, of London; Estlander's Operation, by Dr. Fulton, of Toronto; Myxo-sarcoma, by Dr. Oldright, of Toronto; Puerperal Septicæmia, by Dr. Campbell, of Seaforth; Naso-pharyngeal Catarrh, by Dr. Ryerson, of Toronto; Jequirity in Granular Ophthalmia, by Dr. Buller, of Montreal; Recent Progress in Abdominal Surgery, by Dr. Rosebrugh, of Hamilton; Pneumonia as an Infectious Disease, by Dr. Osler, of Montreal; Medical Advertising and Secret Remedies, by Dr. Dupuis, of Kingston; Materia Cogitans, by Dr. Howard, of Montreal; Cerebro-spinal Meningitis, by Dr. Harrison, of Selkirk; Opium-eating and its Treatment, by Dr. Tilt, of Guelph; and Modern Progress in Laryngology, by Dr. Major, of Montreal.

The International Medical Congress of 1887.—On Tuesday Dr. John S. Billings, of the army, tendered to the International Medical Congress, now in session in Copenhagen, an invitation to hold its meeting of 1887 in Washington.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from August 3, 1884, to August 9, 1884:*

GIBSON, J. R., Major and Surgeon. Granted leave of absence for one month and fifteen days. S. O. 36, Headquarters Division of the Atlantic, August 4, 1884.

HEIZMANN, C. L., Captain and Assistant Surgeon. Relieved from duty at Columbus Barracks, Ohio, and ordered for duty in Department of the East. Par. 2, S. O. 180, A. G. O., August 2, 1884.

MC CREERY, GEORGE, First Lieutenant and Assistant Surgeon. Leave of absence extended two months. Par. 4, S. O. 180, A. G. O., August 2, 1884.

HOPKINS, W. E., First Lieutenant and Assistant Surgeon. Granted one month's leave of absence, with permission to apply for one month's extension. Par. 1, S. O. 67, Headquarters Department of Arizona, August 1, 1884.

Society Meetings for the Coming Week:

MONDAY, August 18th: Chicago Medical Society (Adjourned Discussion on Cholera).

TUESDAY, August 19th: Lehigh Valley Medical Association

(Mauch Chunk, Pa.); Ogdensburg, N. Y., Medical Association.

WEDNESDAY, August 20th: New Jersey Academy of Medicine (Newark).

OBITUARY NOTES.

Sir Erasmus Wilson.—Last Saturday a cable dispatch to the newspapers announced the death of Sir Erasmus Wilson, F. R. S., the well-known dermatologist of London. Besides Professor Wilson's systematic treatise on diseases of the skin, which went through a number of editions, was republished in this country, and was the standard work on the subject in the English language for many years—up to the time when Hebra's brilliant teaching led to a widespread study of that branch of medicine *de novo* in Great Britain and America, as well as on the continent of Europe; besides that, he was the author of several monographs in dermatology, one of which, being somewhat of a popular character, made him widely known outside the ranks of the profession, while another, his "Lectures on Eczema," is the one by which perhaps the future historian of British dermatology will best judge of its author's true status. Professor Wilson will be remembered, too, in connection with the "Journal of Cutaneous Medicine and Diseases of the Skin," a quarterly periodical which was published from 1867 to 1871.

Although his influence as an authority in dermatology was much weakened by his persistent opposition—in the face of the plainest facts—to the theory of the parasitic origin of certain affections of the skin, his admirable clinical delineations, his undisputed diagnostic skill, and his originality and acuteness in therapeutics made him always respected by other workers in the same field. But it was not in dermatology alone that he made himself felt; his text-book of anatomy was for many years in general use among medical students in this country, until it was finally eclipsed by larger and more elaborate works.

Professor Wilson amassed a fortune by his practice as a specialist in skin diseases, and he used his means generously, giving pecuniary aid to needy charitable institutions on many occasions. He also founded the chair of dermatology at the Royal College of Surgeons, of which he himself was chosen to be the first occupant, and established a museum of dermatology in connection therewith. His public spirit and liberality overflowed into non-medical channels, as was well illustrated by his infusing life into the languid movement for conveying Cleopatra's needle from Alexandria to London, furnishing a great part of the money required for the undertaking, and by his own individual exertions contributing chiefly to the successful accomplishment of the enterprise.

Letters to the Editor.

MATERNAL IMPRESSIONS AND CONGENITAL MALFORMATIONS.

PEABODY, W. VA., July 12, 1884.

To the Editor of the New York Medical Journal:

SIR: On May 22d I was called to Mrs. Oliver A., and found her in labor. As I entered the room, she told me the child would be deformed. When questioned, she said she had been frightened at a negro with a "reel foot" about the end of the first month of pregnancy. In order to test her imagination, I asked her which foot, and she said the right one, and insisted that the child would be the same way. On making an exami-

nation, I found the head presenting and labor going on well, and I assured her that everything would soon be over. In about an hour she was delivered of a large male child, and, to my surprise, I found a *talipes varus* of the right foot.

May 23d I called, and found that the child had imperforate anus. Dr. Lonsbury was called, and an incision was made in the ano-perineal region to the depth of two inches, when, finding no traces of a rectum, we closed the opening and proposed Littré's operation, but, being denied, we abandoned it as hopeless. The next day I found the wound doing nicely and the child nursing well. On the 25th the child had two liquid stools through the urethra; it was nursing well and the wound was closing. The condition continued the same until the 2d of June, when peritonitis set in, and the child died June 4th.

Was the *talipes varus* due to the impression on the mother's mind? Was it merely accidental that the two deformities occurred in the same child?

LESTER KELLER, M. D.

AN ODD CASE.

FORT BENNETT, DAKOTA, August 3, 1884.

To the Editor of the New York Medical Journal:

SIR: I have been unable to find in the books at my disposal a case similar to the following. Is it unique? A soldier, aged twenty-four, appeared at sick-call complaining of "hiccougs." He said he had slept very little since midnight, and was "sore all over from hiccouging." He seemed to be suffering considerably. I questioned him closely, but was unable to find anything likely to cause the disturbance until it came out that he was constipated, and had been so "for more than a week." It seems that between "having something to do" and being too lazy he had neglected going to the "rear," except at very irregular intervals, for a long time. I gave him an active purge, and told him to give himself an injection of warm water and soap-suds, and not to delay going to the "rear" when nature warned him.

He appeared at surgeon's call next morning, and told me his bowels had moved freely the afternoon before, and that in a short time afterward "the hiccougs had left him."

Could "reflex action" (a delightful thing to hide behind) have been the cause? I have known of constipation producing neuralgic pains down the legs, but have never heard of its causing "hiccougs." Yours truly,

C. N. B. MACAULEY.

First Lieutenant and Assistant Surgeon, U. S. Army.

Proceedings of Societies.

NEW YORK OBSTETRICAL SOCIETY.

A STATED meeting was held April 1, 1884, W. M. FOLK, M. D., President, in the chair.

Dr. W. R. GILLETTE presented **A Metallic Catheter with a Terminal Opening**, which he had found a valuable substitute for Davidson's rubber catheter in certain cases in which the vesical mucous membrane was caught in the fenestra of the rubber instrument, producing a temporary cystitis.

Dr. GILLETTE also presented a specimen of **the Semen of the Elephant**, which was examined with the microscope.

Puerperal Eelampsia.—Dr. B. F. DAWSON read the following history of a case: "Mrs. S., thirty-seven years old, the mother of ten children, consulted me on the 14th of March, be-

ing then in the seventh month of pregnancy. She said that she had never 'felt life' during the existing pregnancy. At some previous labor she had suffered lacerations of the perineum and cervix, which were closed by myself about two years ago. The operations were followed by perfect relief from the symptoms and by this pregnancy. She had not been feeling well for some months, and on the 10th of March she was suddenly seized with a severe chill, and had fever and obstinate vomiting, with very scanty urine. She called in a physician, who told her that she was suffering from acute Bright's disease, and gave a very unfavorable prognosis. When I first saw her she was constantly retching, was unable to retain anything on her stomach, and showed on the face, neck, and arms an erythematous blush, accompanied by sore throat and reddening of the tongue. There was no oedema of the face or ankles, but there was slight pitting on pressure along the crests of the tibia, with a varicose condition of the veins of the legs. There was no headache, stupor, or disturbance of vision. The bowels were constipated. I gave her five grains of calomel, to be followed by a saline cathartic, and requested a specimen of the urine to be sent for examination.

"The next day Dr. Hawley examined the urine, and found little abnormal about it. The blush was not now so marked, but the throat and tongue were in the same condition as before, and the nausea was still intense. She had passed two fluid-ounces of urine during the preceding twenty-four hours, and it contained about fifty per cent. of albumin. I gave her a grain and a half of elaterium, in divided doses.

"On the following day she had passed no urine, and the bowels had not moved. A catheter was introduced, and one drop of dark urine was brought out in the instrument. Infusion of digitalis was given by the rectum, in doses of half a fluid-ounce, and drachm doses of fluid extract of jaborandi were also administered.

"On the following day she had had a small, semi-solid movement from the bowels, but no passage of urine. The catheter was again passed, but with a negative result. The pulse was 102, the temperature normal. There was no headache, disturbance of vision, or oedema, but the nausea and vomiting were constant, and the throat was swollen and sore. Three drops of croton-oil were given, cups were applied to the loins, and the patient was kept in a hot-air bath for the whole night.

"The next morning she was feeling better, but had passed no urine, and her bowels had not moved, nor had any perspiration been induced by the hot-air bath. About a fluidrachm of dark urine was drawn with the catheter. She was now suffering from cramps in the legs and arms. The digitalis and jaborandi were continued, and she was quieted with small hypodermic injections of morphine.

"On the succeeding morning she was suddenly delivered of a dead child, apparently of about seven months and a half. There was no hæmorrhage, and the uterus was well contracted. She had passed a small amount of urine, and felt much better. Still there were no marked symptoms of uræmia. The hot-air bath was repeated at night.

"On the following day, one week from the time when she was first seen, she was found stupid and slightly delirious. The rectal temperature was 105° F. There was no odor to the vaginal discharge. The vagina and rectum were washed out with a solution of bichloride of mercury, 1-2,000, and about a fluidrachm of urine was withdrawn with the catheter. At noon she had a slight tonic spasm, and quietly died. An autopsy was not allowed."

Dr. Dawson added that the chief interest of the case related to the absence of any of the usual marked symptoms of uræmia until near the close of life, notwithstanding there had been

almost complete suppression of urine during the nine days of the patient's sickness. She had remained perfectly rational, and said she felt well, with the exception of nausea, up to just before death. The case would have been less remarkable had there been any vicarious action on the part of the alimentary canal or the skin. There was but very little material vomited, and it was impossible to make the skin and rectum act.

The PRESIDENT said the case presented many features in common with one which he narrated at the society about two years ago. He referred to the case in which by mistake he removed the only kidney. In that instance, however, the stomach and the intestine seemed to take up the work of the absent kidney, and, after the third or fourth day, the patient began to have about three very copious fluid discharges from the rectum every twenty-four hours, and vomited as many as five or six times during the same period, the vomited matters containing a large amount of urea. Her mind remained perfectly clear up to within twenty-four hours of death. She died, as Dr. Dawson's patient did, while in a light convulsion, this being the only convulsion which she had during the eleven days of her life after removal of the kidney. He believed a number of cases had been reported in which children had lived several days, perhaps as many as fifteen, with entire suppression of urine.

Dr. GILLETTE had treated a child which had total suppression of urine for more than ten days, following scarlatina. The child had a strongly uræmic odor, but nothing passed by the rectum. It finally died suddenly, having been perfectly clear in mind up to a moment before death. He had also seen a case in consultation in which there had been complete suppression of urine for over two weeks. An autopsy was made, and pyonephrosis was found in a marked degree in both kidneys.

Rupture of the Repaired Perineum at subsequent Confinements.—Dr. H. F. WALKER said that within two months past he had attended three women, multipara, each of whom had renewed rupture of the perineum. The first patient had had three children, and he had attended her in her first and third confinements. There was rupture of the perineum at the first confinement, which he repaired immediately. The second time she was delivered in Philadelphia. The physician who attended her closed a rupture of the perineum, and it healed by first intention. The third child was born about six weeks ago, and again there was rupture. In the two other cases two children had been borne, Dr. Walker having attended one of the patients in both confinements, and the other only in her last. In both there had been rupture of the perineum at the first confinement, which was closed, and again rupture and closure at the second confinement, the operation on each occasion being attended with success. He inquired whether it had been the experience of other members to have to repeat perineorrhaphy.

Dr. J. B. HUNTER had repaired a rupture through the sphincter ani in one case, and only slight laceration took place at a subsequent labor, the sphincter remaining perfect. In three other instances he had avoided renewed laceration at confinements by retarding the progress of the head, but the perineum was not left so strong as before labor.

Dr. C. MACKENZIE had seen one lady who had had rupture of the perineum at three successive confinements. The perineum was of that dark brown color which had been said to indicate want of proper elasticity. The lesion seemed not to occur each time in the same place. Repair had been effected without difficulty.

Dr. H. J. GARRIGUES had attended a very blonde lady in three confinements. In the first two a laceration of the perineum occurred, which healed entirely after primary operation; in the third no rupture took place, although the child was as large as the others had been, if not larger.

The PRESIDENT had recently attended a woman who was first confined about twelve months before. On both occasions there was rupture of the perineum followed by successful repair. The second rupture was not exactly in the line of the first. It might not be inappropriate to say a word in this connection about a method which he had been accustomed to employ for the prevention of rupture of the perineum. It was not new, but he did not think it had been described in a perfectly plain manner, or in such a way as to attract the attention of the reader. The method consisted in the prevention of extension of the head until the suboccipital region pressed well up against the arch of the pubes. By thus bringing the suboccipital region squarely up against the pubic arch before allowing extension to take place, we could cause the shorter diameters of the head to be presented as it passed through the osium vaginae, relieving the perineum of pressure proportionately.

Dr. GILLETTE had practiced this method a good while, and had found it of great benefit in the prevention of rupture of the perineum.

Dr. HUNTER said that this method had been taught years ago by Dr. Thomas, but that he (Dr. Hunter) had found it difficult to put in practice. It was not an easy matter to take hold of the head at any point and regulate the direction of its diameters. He had found the most safety to lie in retarding the progress of the head by making pressure on it or on the perineum.

The PRESIDENT thought this amounted to the same thing as the procedure of which he spoke.

Dr. WALKER had found more lacerations occur from the passage of the shoulders than from that of the head.

The PRESIDENT corroborated this statement, but said that, according to his observation, when the perineum was lacerated by the passage of the shoulders there was previously a nick in the posterior vaginal wall, which the shoulders plowed through and enlarged. In reply to a question by Dr. Mackenzie, he said that, according to the method to which he referred, pressure was made on the forehead, flexing the head, resisting extension, and thereby forcing the occiput out of the osium vaginae before permitting extension to occur.

Large Ovarian Cyst.—Dr. HUNTER presented a specimen which had been removed that day. The patient was thirty-four years of age. Four years ago she noticed some enlargement of the abdomen, which within the last year had increased rapidly. Dr. Hunter saw her for the first time a week ago, when he found the abdomen enormously distended by an ovarian tumor. It was a question at first, however, whether the distension was due to ascites or to a cystic tumor. On making an abdominal section, he found the sac everywhere adherent in its upper part to the abdominal walls and to the intestines. The cyst was evacuated and then enucleated, but, when the lower half was reached, it was found to be non-adherent. A small portion had to be cut away and the pedicle tied. The main pedicle was also tied and dropped back. The entire cyst, sac and contents, weighed fifty-five pounds. It was multilocular, but the larger portion of it consisted of a single cyst. The fluid was dark straw-colored. There was some oozing, and a few points were tied, but all bleeding had ceased when the abdominal wound was closed. No drainage-tube was inserted. That evening the patient was doing well. The peculiarity of the case was that the upper portion of the tumor was firmly adherent, while the lower half was free. Had this fact been known beforehand, he did not know that the operation could have been done differently.

Note by Dr. Hunter, April 14th.—The patient made a good recovery, having had no bad symptoms whatever.

Puerperal Eclampsia.—Dr. GARRIGUES read the history of a case:

The patient was twenty-one years old, unmarried, pregnant

for the second time. After her first confinement, three years before, she had been insane for two years. Besides enormous oedema, there was hyperæsthesia of a great part of the skin. The urine contained forty-five per cent. of albumin and many granular and hyaline casts. She had violent headache. She had two attacks of eclampsia. Eight ounces of blood were withdrawn, and a drachm of chloral hydrate was injected into the rectum. The external os formed a transverse slit just admitting the tips of two fingers. She was put under the influence of chloroform, the os was dilated with Barnes's dilators without any difficulty, and a living male child weighing seven pounds and eleven ounces was extracted by turning. After delivery she had one more convulsion. The following days she was treated with the hot pack and derivatives over the kidneys and bowels, and made an excellent recovery, except that her insanity reappeared in the form of melancholia with fits of violence.

He reported the case because several authorities deprecated artificial dilatation and turning, stating that it made the convulsions worse, but he thought this teaching was a relic from the times preceding the discovery of anæsthetics.

Dr. W. M. CHAMBERLAIN said that, in a case of his, the eclamptic phenomena ceased as soon as dilatation of the cervix was accomplished, although delivery was not complete until seven hours later. Since then he had seen another case in consultation. He performed *accouchement forcé*, and in this instance also there were no convulsions after dilatation was considerably advanced until several hours after delivery was effected. This constituted his third case in which convulsions were recurring with considerable frequency up to the time when dilatation was secured, were then suspended until after delivery, and came on again apparently with post-partum contraction of the uterus. Two of the patients recovered; the third one died.

Dr. MACKENZIE inquired whether the patients became conscious when dilatation was effected.

Dr. CHAMBERLAIN replied that the convulsions ceased, but the comatose condition continued.

Dr. GILLETTE did not know but the observation made was an important one, namely, that puerperal convulsions ceased with dilatation of the cervix. He had seen a number of such cases, but, on the other hand, on several occasions he had practiced *accouchement forcé* with the result of intensifying the convulsions. He remembered distinctly one case in which he found the patient suffering from profound coma. Labor had just begun, and the os was dilated but very little. He effected rapid dilatation, but the convulsions continued. He could not see that delivery had any effect whatever in moderating the convulsions. The patient lived forty-eight hours. There was complete suppression of urine. He did not think there was any general rule which would cover all cases. Each case must be a law unto itself. Undoubtedly some cases were aggravated by the mechanical process of dilating the cervix. When dilatation was effected, no doubt some of the reflex irritation was removed, but he did not think that, from the observations thus far made, any proposition could be shaped regulating the management of all cases. There was scarcely any condition, unless it was placenta previa, in which there was so great a scope for the display of ingenuity as in eclampsia with commencing labor. It was perhaps the disposition of every one in such cases to hasten delivery, and yet he believed he had done injury in some instances by interfering.

HENRY J. GARRIGUES, M. D.,

B. F. DAWSON, M. D.,

FRANK P. FOSTER, M. D., *ex officio*,

Committee on Publication.

CHICAGO MEDICAL SOCIETY.

*Meeting of August 4, 1884.***The Ætiology, Pathology, and Treatment of Cholera.**—

The discussion of this subject was opened by Dr. J. H. EMBIDGE with a paper on the *treatment* of the disease.

The treatment of cholera to-day, he stated, was changed but very little from what it was sixty years ago. Innumerable attempts had been made to change and improve it, but all to little or no purpose. Better than in any other way, perhaps, an idea could be given of recent efforts at improving cholera remedies by recalling the treatment of threescore years ago, and afterward giving briefly an enumeration of the various additions recommended from epidemic to epidemic.

Calomel certainly came first in order, and, when employed in proper doses, together with opium, and more particularly in the early stage of the disease, seemed to be equally effective among natives as venesection was among Europeans in arresting its progress. The plan of treatment alluded to was to administer twenty grains of calomel and wash it down with sixty drops of laudanum and twenty drops of oil of peppermint in two ounces of water; and to support the warmth by external heat, the hot bath and hot friction, and internally by cordials. Thus wrote Dr. James Johnson in 1824, in his classical work on "Tropical Diseases."

The discussion at this meeting would indicate how much substantial progress had been made beyond that of sixty years ago, for then the idea seemed to be "to start the bile," as the expression was, and afterward to quiet with opium and support the powers of life. Were we much in advance of this treatment in 1884?

The epidemics succeeding 1817 seemed to call out the following remedial agents, of none of which had he found mention made prior to the dates accompanying them. The mere enumeration of them would suffice to show how lamentably fatal cholera had been, and how helpless medical skill was in rescuing human life from this scourge. Many remedies that we now saw heralded in print as new, and wonderful in curing cholera, were very old. Many remedial measures mentioned in the lists to follow would provoke a smile of pity or of incredulity.

The epidemic of 1826-'27 called out the following-named agents as useful in curing cholera: Carbolic acid, hydrocyanic acid, nitro-muriatic acid, alum, antimony, arnica, bismuth, buchu, cauterization, chlorine, counter-irritation, cupping, enemata of cold water, gold chloride, oxygen, purgatives, sodium chloride.

The epidemic of 1832-'34 brought out the following-named remedies, a lengthy list, perhaps explained by the fact that the epidemic was terrible in its severity and mortality: Sulphuric acid, albumen, alkalies, ammonia, bandaging, hot-air baths, nitric-acid baths, sand baths, vapor baths, belladonna, bile, bladder injections, blood transfusion, cinchona, coffee, Colombo, copper sulphate, creasote, diuretics, electricity, evacuates, narcotic enemata, saline enemata, tobacco enemata, guaco, hæmostatics, horse-radish, ice, inhalations, venous saline injections, ipecac, iron, juniper-berry oil, lead, ligature, lime-water, venous milk injections, musk, nitrous oxide, oil of cajuput, croton-oil, percussion (tapping the abdomen), salines, stimulants, strychnine, sudorifics, the tourniquet, turpentine, cold water.

In 1848 the following remedies were brought forward: Hydrochloric acid, anesthetics, arsenic, camphor, capsicum, carbon disulphide, carbon chloride, chloroform, ergot, ether, gunpowder, hydrotherapy, matico, metals, naphtha, naphthaline, silver nitrate, silver oxide, sulphur, zinc oxide, zinc valerianate.

The epidemic of 1854 brought out the following-named remedies: Alcohol, calcium-chloride bathis, castor-oil, hard cider, cinnamon-oil, eupatorium, garlic, movement, potassium permanganate, quassia, sugar, vaccination, water by injection into the peritoneal cavity.

Dr. I. N. DANFORTH gave the pathology of cholera from study and from his own researches, and stated that he knew enough about it to say that he knew but little regarding its causation. He had studied the disease carefully in 1873, and illustrated his remarks by microscopic specimens that he mounted at that time. Every organ of the body was more or less affected by the disease. There were three lesions that were apparently always present—in the blood, in the intestinal canal, and in the kidneys. The blood in the early stage became thickened, it might not flow, and sometimes was stationary; it was invaded with microbes, or micrococci, or a bacillus, but these organisms were not related to the causation of cholera. The same variety was not always found in the blood, in the intestinal canal, or in the discharges; cholera was not produced by any specific germ. The blood lost its watery element to a great extent, and with great rapidity. During the localized epidemic of 1873 he had examined the discharges from the intestinal canal in ante-mortem and in post-mortem specimens. In each they contained vast numbers of bacteria, micrococci, and other things, but he would assert that these had nothing to do with the causation of cholera, but that a nidus existed for their development. Ziegler, Lebert, and others, according to von Ziemssen, had stated the same thing, that they were incidentally there, that they sprang up in the intestinal fluid. It was a field for them.

The first slide shown represented a drawing the speaker had made illustrating the disease at about the middle of the attack, and showed a grouping of cells and of granular matter. Some authors stated that the intestinal epithelial cells were not discharged until after death, but he was sure that while the patient was living the intestine might be stripped of its epithelial coating. A specimen from the ileum, about ten inches above the valve, was shown, to illustrate the cellular coating of one of the villi. Specimens of Peyer's glands were shown, in a distended form, also to show a grouping of cells and many nuclei. The entire surface of the lining of the bowel was very red, or bright pink, or there were ecchymotic patches. The arteries were not much distended, but there was an enormous amount of stagnant blood in the intestinal canal. The kidneys underwent a rapid fatty change in the early stage, the cortical portion becoming enlarged, but this acute fatty change rarely became chronic after recovery. The liver, spleen, brain, spinal cord, and nervous system sometimes became hyperæmic. The speaker did not pretend to say that his remarks gave additional light upon the causes of cholera. We had not arrived at the cause. Lebert had said that there was a specific cholera germ, but he had not stated what it was. Ziegler said that we did not know it. Skoda also stated that a germ was present as the cause. Koch believed he had discovered the germs, but his experiments to produce the disease in domestic animals had proved futile, perhaps, though, for the reason that, as was well known, they did not take cholera. There were certain changes that occurred in the small intestine, due to the invasion of specific germs or of a virus that we do not know, the effects of which determined to the emunctory organs and effected depuration.

Dr. W. T. BELFIELD, being requested to give his views upon the pathology, stated that he never had seen an epidemic of the disease, and his knowledge of it was second-hand. He would briefly endeavor to recapitulate Dr. Koch's discoveries regarding the disease as it occurred in Egypt and India. There were constantly present in the wall of the intestine organisms that

were easily recognized by reagents and staining tests. These organisms, called bacilli, were never found in the blood or in any of the organs affected by other diseases. This did not prove that these organisms caused cholera, or that their relation was the same as that of the organisms found in one or two other infectious diseases to be named presently. The association of these bacilli was explained in one or two or three ways: They might be a cause, but he thought the reverse was the case. To decide this, it would be necessary to separate the organism from the juices, and inoculate a healthy animal, as we would in anthrax. Koch had stated that this kind of organism, and no other, was constantly associated with cholera. He had made crucial tests, but all the attempts to inoculate dogs, cats, and rabbits had proved futile. This, however, did not prove either that the germ did or did not cause cholera. Certain domestic animals were insusceptible to cholera. The bacillus was asserted by Koch to be always present and to multiply rapidly. In relapsing fever low organisms were found. The spirillum was always present in the acme of that disease, but that did not prove it to be the cause of the disease. If human beings could be experimented upon in relation to the connection of the bacillus with the cause of cholera, and a person thus contracted it, then this theory could not be contradicted. The bacillus flourished in slightly alkaline fluid, and acids destroyed it, and had the best effect in treatment.

Dr. JOHN BARTLETT stated that in 1874 he made observations on a fungus and concluded that this fungus underwent phases of development. First it was a cell. It was the active agent in altering and impairing the blood and tissues. This we supposed was ultimate. In ague it was a cell in a developing fluid, and did not remain at rest. It emigrated and found its way into a tissue. These cells formed a certain crystalline something. This crystalline substance was not lifeless; it put forth buds, and these sent forth a fluid, which was homogeneous and protoplasmic. The cells might be inert and not self-multiplying. The protoplasmic fluid was not recognized in the blood. Protoplasmic fluid was not recognizable by the microscope until cells were developed. Dr. Koch never had demonstrated them so as to be visible to the naked eye, and his results were unsatisfactory.

Dr. C. G. SMITH had made up his mind years ago that the disease was highly contagious, yet there were many points to be settled relative to the contagiousness of cholera. A woman of Florence Nightingale's experience pronounced against this theory, and some physicians professed to have disproved it, saying that doctors need take no special precaution to guard against contracting the disease.

The enthusiasm of some French authorities was so great against the theory of contagiousness that they had been known to taste the discharges of a cholera patient—and they did not take the disease either. Now, regarding this, it had been said that the discharges, when fresh, were not contagious; they must ferment or decompose before they became contagious. The whole history of the disease proved its communicability. In 1854 especially was this true. In India it was propagated by moisture and filth, and then it followed the great lines of travel, but it did not go quite around the world. He had never heard of its being in Australia. It could be stamped or wiped out, and this had been done, as had been proved, by vigorous executive methods of quarantine before it reached this continent. If it got a foothold here, it would be more difficult to check its course along the railroad lines of travel. Yet it could, in a proper way, be wiped out. During the last epidemic in this city there seemed to be a focus of cholera at Butterfield and Thirtieth Streets. Twenty cases appeared suddenly, when the houses were fumigated, the people removed, and other vigorous measures

taken to purify the premises. This stamped it out. It was a malignant poison, and found its way into the intestines. Nature made an effort to remove this, by an eruptive process, so to speak, in pouring out serum from the blood, profuse perspiration, and other morbid symptoms, as a result of this purifying method. It had a paralyzing effect, the blood became thickened, there was want of secretion by the kidneys, cramps came on, and the other attendant symptoms—all arising from the loss of serum.

Dr. C. W. EARLE stated that men of his age had not yet passed through an epidemic of cholera. If it were germane to the subject under discussion, he would state the differentiation of infantile diseases. The summer bowel affections of children could, at a meeting of this society at an early date, be discussed. This, he thought, should concern us more at present than Asiatic cholera. Were the latter disease among us, then both could be better coped with and discussed simultaneously. Steps should be taken to diminish the great mortality among this young class, and at a future time, if desired, he would present his views upon that topic.

Dr. N. S. DAVIS was invited to give the differential diagnosis and treatment of cholera and cholera morbus. He stated that he felt embarrassed to attempt to discuss these subjects before the society, for the time was limited, and he feared that he would consume more time than belonged to him, and thus he could not do justice to the subject, and the result would be unsatisfactory to himself and others.

The following, in brief, had been his experience: He had studied cholera in its epidemic form clinically, in a degree, upon a number of occasions. In the summer of 1849, in the city of New York, he remained until the epidemic subsided, working night and day consecutively for twenty-one days, attending to those afflicted. In the autumn of 1849 he came to live in Chicago and treated the disease in this city, and in the summers of 1850, '51, and '52 also. In the summer of 1853 we were free from the disease; there was no semblance of it whatever. In 1854, between the 20th and the 24th of April, the people of this city awoke to find it again among them, and for a while a disjointed case would spring up every three, four, five, or six days during the months of May and June, although during the last days of June eight or ten deaths a day occurred. Dr. Davis then gave a number of reminiscences of quarantine along the Illinois River to prevent the disease from entering Chicago by preventing its coming from the interior of the State. In 1866 he pushed his last resources and nearly exhausted his powers of vision to discover the power of its contagion. He kept the discharges of patients for one or two weeks, and examined them microscopically. So far as cholera was concerned, there were half a dozen different varieties of germs that were accompaniments of the disease. And every variety of disease invested with a degenerative accumulation of the natural cells in the tissues was accompanied by some form of germs, which were deteriorated living organic matter, and reached dissolution, no matter what the disease was—not as a cause, but as an accompaniment. They were uniform and an accompaniment of effects. Experiments at inoculation might produce the disease. Some persons, perhaps, might have produced it in this manner. During the cholera of 1866, steamships crossed the ocean in nearly as short a time as they did now. It did not come with the tide of travel then. In 1848 it spread over Europe. He remembered two vessels that landed here that year—one at New Orleans, the other at New York. The former was not quarantined; the latter vessel arrived at New York, and two or three emigrants were attacked with cholera. They were taken to a boarding- or lodging-house on Washington Street, New York, where there were four hun-

dred people, yet cholera did not spread among them. This occurred in November or December. The vessel was quarantined, and the disease died out. At New Orleans the ship was not quarantined, and cholera developed furiously. In the spring of 1849 cholera started again in New York, spread over the country, and the disease died out. Of course, we looked to it, and tried to stamp it out. It rarely prevailed for more than one or two seasons successively, although in this city the years 1849, 1850, 1851, and 1852 had proved exceptions.

Regarding the theory of germs and the propagation of the disease: In 1854, in this city, no one disinfected the discharges, and we had no return of the disease until 1866. But, of course, this did not argue we should not do something toward placing ourselves in the best possible sanitary condition, for the disease could not flourish where cleanliness, good air, and pure water were found. During this year many timid people left the city. Some physicians also got away—and he advised any physician that was afraid of cholera to make his arrangements to get away from it. It began the latter part of June, but not very vigorously; deaths from it occurred every day in June and July. In August it rained nearly every day, and excessive moisture did not contribute toward supporting it. The result was, cholera entirely disappeared. During the early part of September the agriculturists held their State fair here; farmers that arrived in the city and stopped at hotels where but a few weeks previously people had died of cholera, all returned home safe. Yet during the last two weeks of September we had sultry weather. The water and moisture had all dried. Cholera again sprang up rapidly, and, in the three weeks in which it prevailed—reaching over into October—a thousand deaths occurred from it. Then we had frost, and a little later snow fell, and in another week no semblance of cholera was left.

Three things were essential to produce cholera: 1. High temperature; 2. A location where the soil was damp and favorable to decomposition of organic matter; 3. The presence of an organism or organic matter in that soil. In the rugged, hilly districts, where there was pure air, the disease could not spread. As an instance of proof of this, the Catskill Mountains were mentioned. The prevention included antiseptic measures and entire cleanliness. Alluvial soil must be looked after. Referring to the latter, particular mention was made of our own locality. The banks of portions of our rivers should be looked to.

Some points may be mentioned relative to the differentiation of epidemic cholera and cholera morbus, although the textbooks gave them. In the latter disease the urine was seldom or never suppressed; there was more griping in cholera morbus in its early stage; there was no preceding stage of diarrhoea in cholera morbus. In epidemic cholera there was usually a premonitory stage of diarrhoea lasting from four or five hours to as many days. It was a painless diarrhoea. There was lassitude, and sometimes a feeling of "crawling" was present, or a sense of numbness; then there supervened a strange prickly feeling, noises in the ears, or a stunning feeling in the head. Then the patient would pour out a vast quantity into the chamber, the blood would recede from the surface, he attempted to lie down, and vomiting would set in; and every ten to twenty minutes he would go through this process of vomiting and purging, discharging unusual quantities of serum. It was rice-colored or turbid in color. There were flocculi in the discharges, also mucous epithelium, which settled to the bottom. The patient gradually withered, the lips became leadened, he might have three or four more evacuations before cramps appeared, which occurred first in the calves, then in the muscles of the arms. His voice became husky or hoarse, and he was scarcely able to speak above a whisper. There was no bile in the discharges. There was lowering of the temperature; the breath was cool

before collapse and death. Sometimes cholera morbus would put on this aspect, and we might not be able to be absolutely certain of its nature, except that it was not epidemic cholera; and sometimes cholera would differ from the brief description he had given. A patient might be stricken suddenly, become faint, and go into collapse in from three to six hours, with perhaps only one evacuation of the bowels. The vital forces were at once paralyzed. The speaker then cited a typical case of this variety.

In regard to the indications for treatment, as soon as possible put a patient entirely at rest in the horizontal position. Give him some of the mineral acids, such as dilute sulphuric, or sulphurous acid, or hydrobromic acid. But we must not depend wholly on these to arrest the progress of the disease. The mucous membrane in its entirety was an absorbing surface; first its middle portion, as the stomach, became changed; it was converted into a most rapid exudation. The action of the stomach was exosmotic, while there was relaxation of the cutaneous surface. The blood, which underwent the rapid change as a result of the disease in the loss of its saline elements, was washed away. Great as the molecular change was, the heat ceased. The vaso-motor nerves might be the first to be acted on. We must attempt to stop the inverted action in the mucous membrane. How could it be done? He had cupped the spine, applied sinapisms over the epigastrium and between the shoulders, applied dry warmth, and used frictions. He had seen patients wrapped in ice-cold blankets, also ice and salt applied. He had used emetics of salt and mustard, and bled patients, and it had temporarily relieved them, but the blood would not always flow when a vein was opened. In a few instances he had seen emetics of mustard used with benefit. He had tried almost all rational measures, but had not tried vaccination nor horse-radish, as the paper of the evening stated had been used long ago.

The treatment that was most successful was to diminish the excitability of the mucous membrane, lessen the alvine discharges, and keep up the action of the kidneys. As above stated, he put the cholera patient at rest in a horizontal position, then applied dry warmth to his limbs. If cramps came on, he seized the muscles with his hands and compressed them, applied a large sinapism over the epigastrium, then, when it became too irritating, he changed its situation. The internal treatment was as follows: For both vomiting and purging he gave calomel gr. j, morphine gr. $\frac{1}{4}$, white sugar gr. v. After each attack of vomiting, mix it with a spoonful of ice-water, or drop it on the back part of the tongue, and let the patient swallow small pieces of ice afterward. Repeat this, perhaps, as often as every half hour or hour. Serve the rectum in the same manner with anodyne and alterative remedies, as acetate of lead gr. x, morphine gr. ss., in two ounces of cold water, aiding the patient to retain the enema. In 1866 he began using the following: \mathcal{R} Carbolic acid, gr. $\frac{1}{4}$ – $\frac{1}{2}$; paregoric, f 3 ss.; tincture of gelsemium, \mathfrak{m} v, in a little glycerin and water. Give these remedies in the proportions suggested alternately with the powders. He had found these means to be very beneficial in overcoming the vomiting and purging, and aiding the urinary secretion. We should replenish the system by administering beef-tea or other broths well seasoned with salt in suitable amount every fifteen minutes to supply the waste of saline elements from the blood. Give also strong coffee, a teaspoonful at a time, gradually increasing the nourishment to support the vaso-motor system. To check the profuse perspiration, give a hypodermic injection of atropine, and minute doses of strychnine, to act on the periphery. He would advise copious injections of saline solutions into the areolar tissues of the thigh, or any other part, until reaction came on.

Such, in brief, was the outline of treatment that Dr. Davis gave, and he concluded by saying that the chances were fair that in twenty-four hours the patient would be safe.

The society thanked Dr. Davis for his address, and it was resolved to continue the discussion of cholera at the meeting two weeks hence.

LISTON H. MONTGOMERY, M. D., *Secretary*.

Miscellany.

THERAPEUTICAL NOTES.

A Saline Intra-venous Injection for the Treatment of Cholera.—M. Hayem ("Revue scientifique"; "Lyon médical") thinks that, besides the need of restoring the salts lost from the blood of cholera patients, it is desirable to overcome its acidity, and for that reason he advises the addition of soda to the saline injection employed, as in the following formula:

Water.....	1,000 grammes;
Chloride of sodium.....	5 "
Hydrate of sodium.....	1 gramme;
Sulphate of sodium.....	25 grammes.

Copper and Cholera.—M. Burq has renewed his advocacy of copper by writing a note which was presented to the French *Académie des sciences* at a recent meeting by M. Bouley ("Gaz. hebd. de méd. et de chir."). The note contains the following propositions:

1. Persons imbued with copper by working with the metal daily have always been exempt from cholera, with very rare exceptions.

2. Numerous experiments in certain hospital services have demonstrated that the free use of copper is sovereign against the cramps and other nervous phenomena peculiar to cholera.

3. Dr. Lisle's cases (twenty-five cures in thirty-two cases), Dr. Pelletier's, Dr. Arnal's, Dr. Blondet's, Dr. Berger's, and those of others, as well as M. Burq's own experiments made at the Hôtel-Dieu in 1866, in conjunction with M. Horteloup, showed that the salts of copper, administered freely by the mouth and by the rectum, and by the endermic method in the gravest cases, were the remedy *par excellence* for cholera. Of sixty-six known cases of confirmed cholera, eighteen of which were treated at the Hôtel-Dieu, in which the absorption of the remedy was still possible, there were fifty-five recoveries.

[At a meeting of the *Société de biologie* (*Ibid.*), M. Bochefontaine submitted a letter from Dr. Muston, of Montbéliard, contradicting certain of M. Burq's assertions relative to cupric immunity from cholera, and stating that the workmen of Beaucourt, composing nearly the whole of the population, all work in copper, brass, iron, and steel, and that they were decimated by the epidemic of 1854, although they were the very workmen that M. Burq has declared were preserved from the disease.]

Borax as a Preventive of Cholera.—At the same meeting (*Ibid.*) M. de Cyon called attention anew to the antiseptic properties of borax, and to the fact that it was so harmless that it could be taken into the system in quantities as great as fifteen grammes [nearly half an ounce] daily without giving rise to the least trouble, as he had announced so long ago as 1878. Since that time his confidence has but increased in the excellent qualities of the drug in all parasitic or microbic affections, and notably as a powerful preservative against cholera. Its efficiency, he says, is shown by the fact that during past epidemics of cholera the workmen employed in manufactories of boric acid have always been spared, although the neighboring population were killed in the proportion of one third, as at Lordeveilo, in Italy, for instance, in 1864-'65. Taken in doses of five or six grammes daily, borax not only has a direct action on the microbes contained in the intestinal canal, but, passing into the blood, it is capable of reaching the bacilli which have gained access to that fluid. In cholera times the constipating action of the bi-borate of sodium is an additional argument in its favor. The author advises washing the surface of the body and the external mucous mem-

branes with a solution of boric acid or of borax, and mixing the latter with the food and drink to the extent of ten grammes in twenty-four hours.

The Use of Arsenic in Pulmonary Tuberculosis.—According to the "Centralblatt für klinische Medicin," Stintzing has tried the arsenic treatment at von Ziemssen's clinic in sixteen cases, two of which have proved fatal. In one of these cases the drug could be employed only for eleven days, and in the other only for three weeks. In but four cases was there any noticeable lowering of the temperature; in eight it was entirely unaffected; and in one case the drug even seemed to raise it. In three cases there had been no fever. In only one instance was there any diminution of the dyspnea, of the cough, or of the expectoration. The frequency of the pulse was maintained in four cases, increased in six, and decreased in two. Nutrition was not increased in a single instance; the weight of the body remained the same in two cases, and sank in nine, while two cases of apparent gain were accounted for by a highly dropsical condition. In no case was there a subsidence of the local processes in the lungs, but in eleven they advanced notably. The breathing capacity was repeatedly measured in twelve cases; four of the patients improved a little in this respect, but this did not seem very certain, for, on account of the patients' awkwardness, the early measurements were thought to have been too low; in two cases the capacity remained the same; and in six it was evidently diminished. The number of bacilli found was unaffected in seven cases, and increased in three; in only one was it diminished, and that several weeks after the use of the remedy had been discontinued.

The Transportation of Persons Injured in Railway Accidents.

At the first meeting of the Surgeons of the Eastern Division of the Wabash, St. Louis, and Pacific Railway, held at Decatur, Ill., in January, 1882, the president of the organization, Dr. J. T. Woods, of Toledo, O., who may be said also to have been the originator of the system of railway medical service now in operation, read a paper in which he said that, in its strictest sense, the duty of the medical man was humanitarian. His highest function was to preserve life, and next to that, to save from suffering. This was especially true of the surgeon whose path of duty led directly to the sufferer, and rudeness, indifference to humanity, and the omission of any possible means of alleviating suffering were wholly inexcusable. In actual practice the means of alleviation were not always apparent or easy of attainment, but still they were worthy of the most earnest inquiry and careful effort. It was not always in great and showy ways that we were to do the most actual good to those who fell under our care; but little things, the veriest trifles professionally considered, were often of mammoth proportions to the sufferer, and he was the only one to be considered. Our duty to a patient began at the moment of our arrival, and everything thereafter should be directed with scrupulous care, for every twinge of pain was a blow at life. For this reason both patients and surgeons were thankful for anaesthetics, and the former was relatively as grateful for avoidance of the dread agony in every step preparatory to the operative work proper.

These reflections had prompted him to present some suggestions in relation to the handling and transporting of the injured, both before and after operation. The ideas were to some extent applicable wherever bodily suffering was combined with the necessity of removal, but he desired to call attention to the injuries incident to railway accidents. Few rules or specific directions could be laid down, as conditions in every way varied, yet reflection and suggestions might prepare us to more readily and effectually do the duty of a special observer.

Whether the accident involved few or many, the surgeon usually arrived after the lapse of some time, during which interval much had been done as seemed best to those present; but on the arrival of a medical man he became the director of every movement, and with discretion could conduct future proceedings much as in his judgment seemed best. The railway surgeon was supposed to, and always should, have his instruments and appliances ready at hand, so as to be able to move with brief notice. These instruments and appliances should not be numerous, and all parties would find that, whatever the surgeon might bring, nothing would be more valuable where there are badly-

injured persons than a pair of *stretchers*. For the reasonably proper handling of the kind of patients usually found, they were absolutely necessary. There should be a pair certainly at every point where there was a surgeon, and they should accompany him in his response to a call. With two pieces of scantling $7\frac{1}{2}$ feet in length and 2 by $2\frac{1}{2}$ inches in width, rounded at the ends so as to form convenient handles, and a light piece placed across at the distance of eight or ten inches from either end, an efficient frame could be formed. From outside to outside of this frame should measure but 21 inches, which was wide enough to carry a stout man, and would pass through the guard-rail posts and door of a passenger car. By nailing over this a piece of canvas, or, if that was not available, any stout material, such as two thicknesses of ticking, we had a simple and cheap stretcher. The cloth should not be stretched very firmly, except at the ends, as a little bagging would afford much easier rest for the body. Of course, it was very crude and insufficient, but much better than none. A really good stretcher was so valuable that he had devoted some thought to the subject, and those that were being made for the service would fold together for convenience of carrying, the folding cross-bars being so constructed that they would not cut the canvas, and the legs automatically held in place whether down or up, all staples and hooks, that were always in the way, being dispensed with. The canvas was as short as would answer the purpose, and the handles extended not more than eight inches beyond it. Its width was such that it would just pass through the door of an ordinary passenger coach, a feature the value of which would be shown in the explanation of it in use.

Having, then, a patient with fracture, lying on the ground, the first thing to do was the application of support outside the clothing, for the purpose of preventing the sharp fragments from doing harm in handling. Supports might be made of any available material—pasteboard, a shingle, or a strip of board, and held in place with bandage, cords, or, in short, anything that would answer the purpose. He had thus temporarily dressed a fractured leg with a few corn-stalks, or lashed one leg securely to the other with two handkerchiefs. In case of a crushed limb the parts should be so managed as to drag as little as possible.

The next step was to *put the patient on the stretcher*. The best method he had found was to place one or more men on the *right side* of the patient, their duty being to lift the body. Two should take a position on the opposite side, to raise the legs, head, and shoulders, standing as near as practicable to the upper and lower part of the body respectively. They should be shown where to take hold and what to do "all together" *when commanded*. At the word, the men were to lift the patient directly upward just far enough to permit the surgeon to slip the stretcher, with its legs folded up, under the patient's hips *from his left side*, and slide it quickly as near under and parallel to the body as possible. The patient had thus far only been raised upward a few inches, and with a very slight lateral movement, almost without moving their feet, those that held him could lay him gently down on the canvas. To avoid contact with the ground, the man who handled the stretchers should keep the end on which the body was to be placed a little elevated. At once the other end was to be raised and the sufferer would have been made ready for removal with very little annoyance. If the body was very heavy or the assistants were few, those who lifted might take the patient by the shoulders and raise the body and hips off the ground. The stretchers being then slipped under, one man might take the legs and, by simply turning the body on the nates as a pivot, effect the desired result. In neither case had the body been jolted and dragged by raising it far from the ground, and especially had the jolt, jar, and dragging of carrying in arms by inexperienced men been avoided.

From this the sufferer should not be moved until he was to be placed on the *operating-table* or *in bed*. The method suggested for accomplishing the latter was to fold up the legs of the stretcher and carry it somewhat diagonally across the table and near to the surface, the patient's right hand being toward the pillow. In this position the patient on the stretcher was allowed to rest on the table. Those who were to lift the body were placed at the *patient's left side*, those who handled the legs at his *right side*. They were to take hold at the word of command and lift together, the body being raised so as to clear the

stretcher, which was then easily withdrawn, and, by a slight movement of those holding the body, it was placed in the desired position.

Removal from the table was effected in nearly the same way that the patient was first placed on the stretcher, and he might be laid in bed with as little discomfort as had occurred in placing him there. To do this most satisfactorily, the stretcher should be carried beside the bed, the patient's right hand being next the pillow, and the foot of the stretcher being brought diagonally across the bed. Two men on his left side now raised the body, one handled the legs, while the surgeon slid the stretcher from under him—which was usually easiest done from the foot—when by a slight movement the assistants laid the body in its place.

Sometimes it was necessary to *place patients in the cars* either before operation and perfect dressing, or very soon thereafter, and how to do it most readily and comfortably had been not a little puzzling. The baggage car was most convenient of access, as a cot could be passed through the side doors. It was, however, a rough place for a vigorous man to ride in, and did not answer well for the injured, even with the aid of a cot, except for short distances. He had also suspended a stretcher from the roof by means of ropes, which answered passably. This method was greatly improved by the use of long India-rubber bands slipped over the end of the stretcher-handles, the ropes being attached to them and the timbers above, their elasticity partially breaking the jar of the car. These bands being usually unattainable and also liable to break, rendered the plan practically useless, and, so far as the baggage car was concerned, we had left only rope suspension and the cot. The sleeping car was usually occupied, and its use was impracticable for the further reason that it was nearly impossible to get an injured man through the various passages leading into the seat or berth apartment. There was, then, nothing remaining but the passenger coach, and the problem was to take what was at hand and make out of it a bed in which a patient with crushed legs, arms, or ribs, or suffering from concussion, could be placed easily, and on which he could ride without detriment. It could be done by taking the back off of one seat. This was done by the removal of a few screws, and a screw-driver would always be found in the possession of the engineer. The backs of the seats next before and behind should be turned so as to leave the space of three seats open. The cushion of the seat from which the back had been removed should be turned upside down for one end of the proposed bed, and another placed in the same way on the cushion at the other end. We then had an open space of sufficient length and a double set of springs on which to place our support. If we now had our patient on a stretcher narrow enough to go through the car-door, he was not to be removed from it, but the whole passed between the iron posts and through the door into the car, the carriers taking hold of the cross-bars in lieu of the handles in passing through the door. Of course, the cars must be separated to secure the necessary space between. The stretcher with its contents was now to be laid down, the ends on our double cushion springs. If the handles were too long to lie between the open seats, one back could be raised so that they would project beneath it. This, it seemed to him, was not only a comfortable, but a thoroughly practicable means, provided we had stretchers sufficiently narrow. But we were very likely not to have the stretcher, and the patient was placed on a board. In that case he would try to arrange the board and patient exactly as he had described, believing that the double springs referred to would make it a more comfortable arrangement than could be brought about in a baggage car. Without removing the back of a seat, which might by some mishap be impossible, the backs of two could be raised horizontally, one seat intervening. By fastening them in this position a stretcher could be laid on them, but the whole jarring of the car would be communicated to the patient and add greatly to his discomforts.

In lieu of this, another method suggested itself, but it involved the lifting and handling of the patient—the very thing to be avoided. It was to take the cushions out of *three seats*, the backs of which were arranged as first described; lay a piece of board, a small pole, or anything that would reach across them at either end for a support; and place the three cushions side by side on these supports. With one cushion in addition the whole surface would be covered, and on this bed two persons could lie quite comfortably for even a long distance.

Of course, varying circumstances would suggest modifications of the methods proposed, but it seemed a valuable thing to know that in a dense forest a common railroad car might, in a few minutes, be made a comfortable means of conveyance for one whose life was well-nigh crushed out of him.

But the problem occasionally presented itself in another and really embarrassing form. It might be necessary to move a patient whose leg had been broken long before recovery was sufficient to permit its use in walking. We would suppose he could get about readily with crutches, but was unable to go up or down a stairway, and could not safely attempt even the steps at the front door. In that case two men should be selected, one rather tall and the other of less height, and the patient placed at the top of the steps, the injured side turned a little forward to allow the broken leg to swing clear in the further movements. The tall man having taken his place on the injured side, the patient should put his arm around his neck, and the shorter man take his place in like manner on the opposite side, both placing their arms around his waist. The tall man should step down one step when all is ready. The injured leg would swing clear, and the two men, slightly aided by a springing effort of the patient, could easily lift him sideways and plant him on his sound leg one step downward, and thus slowly and steadily, step by step, to the bottom. The same manœuvre would take him up stairs, save that in going up the short man should take the advance. This method was entirely practicable, but a strong-armed, low-back chair could be used satisfactorily. The patient being seated in it, one man was to step in front and take firm hold of one of the rungs; another was to seize the back, and both, moving together, could walk up or down stairs with great ease and safety, one of the carriers moving backward. The chair had this further advantage: When it was necessary to place the cripple in a wagon, a light, open-bodied spring being the best, he could be lifted into and out of it without leaving his seat until his arrival at the station, and, in fact, by no other means could he so readily be got into or off the car platform as by carrying him up and down the steep, long steps by the same method. Either of the methods described would answer, but the latter was no doubt most generally applicable.

Shock in Railway Injuries.—At the same meeting Dr. C. B. Higgins, of Peru, Ind., read a paper in which he confined himself to shock proper, ignoring the condition occasioned by loss of blood which so closely resembled shock in its symptoms, but which treatment demonstrated to be of an entirely different nature. Neither did he consider the remote manifestations of shock, but would leave that branch of the subject to the neurologists.

With the exception of burns and scalds, railway injuries were attended with greater fatality than wounds received in any other way. It was generally conceded by surgeons that the cause of the unusual mortality following lesions of this character was due to the fact that in a majority of the cases the shock was in intensity out of all proportion to the injury received. Most writers on this subject failed to give sufficient prominence to physical influences in considering its etiology. In Dr. Higgins's opinion, mental impressions were the chief, if not sole, elements to be considered in connection with the cause of the intense degree of shock so often observed following railway accidents.

Not long ago he had been called upon to visit a young man who had fallen in front of his engine and had his leg crushed; there was no other injury, yet he died, in less than three hours after the receipt of the hurt, of shock. He was confident that death would have resulted had there been no bodily injury. The terror induced by the contemplation of the consequences of the fall was sufficient to produce a state of mental depression from which it was impossible to recover. This young man was a perfect specimen of physical manhood—aged twenty-five, of sanguine temperament, and guilty of no excesses.

Shortly after the occurrence just reported, Dr. Higgins was summoned to see an old man of seventy-two who, while in an oblivious state of intoxication, had been run down by an engine and received a wound to all appearances as serious as the one in the case previously mentioned. In the latter case there was no evidence of shock, and the patient was so thoroughly under the influence of liquor that the leg was amputated in twenty minutes after the infliction of the wound,

without the administration of any other anæsthetic. The patient made a rapid and perfect recovery.

It was not his wish to have it understood that he had drawn his conclusions from the observation of the two cases reported, for he could cite a number, all tending in the same direction; in fact, all his experience as a surgeon led to the conviction that when a wound was inflicted without warning the attending shock was generally of little consequence. He had never witnessed an extreme degree of shock occurring in a person who had been injured while in a state of intoxication. How often did we hear the remark in reference to an intoxicated person who had survived some serious accident, "Had he been sober it would have killed him!"

Another case strengthened his position. An insane spinster, aged thirty-eight, eluded her attendants and threw herself in front of a moving train, receiving injuries which required the amputation of both legs. In her case there was no hæmorrhage and no shock. When freed from the influence of the anæsthetic, after the completion of the operation, she was found to be in possession of her right mind and had so remained ever since. She speedily recovered from the effects of the accident without the occurrence of an unfavorable symptom.

Entertaining the views he did in relation to the cause of shock, his treatment would naturally be directed toward securing a state of mind as little influenced by fright as possible. Professor John C. Dalton, in his work on "Physiology," when speaking of shock, said: "It is only after nervous irritability has been restored by repose that voluntary motion and sensation are re-established." It would be well for us in the treatment of shock, such as we met with in railway practice, to keep this statement well in the foreground and govern our efforts to secure reaction accordingly. Many patients had been thrown into a condition of more profound collapse by the too vigorous application of so-called restoratives, who, if left to themselves in seclusion and quietude, would have recovered.

It was of the first importance to remove the patient, as soon as possible, from the scene of the accident, to prevent his being surrounded by the curious crowds that were sure to congregate upon occasions of this kind. The remarks made by thoughtless and ignorant people in the hearing of the victim in reference to the serious nature of the injury added greatly to his depression and lessened his chances for recovery. He should be conveyed to a well-ventilated apartment, and only such persons admitted to the room as might be necessary to care for him properly. The surgeon and attendants should make every effort to conceal their anxiety, for the apparently lifeless patient was often possessed of sufficient vitality to comprehend his surroundings.

It would generally be found that the victim had been liberally dosed with whisky or brandy before the arrival of the surgeon. He wished here to express his unqualified approval of the position taken by the late Dr. John T. Hodgen, at the meeting of the American Medical Association in 1873, in reference to the administration of alcoholic stimulants in the treatment of shock. When the stomach was sufficiently active in these cases (which was not often) to allow of their being appropriated, they were of no use. It frequently happened that, when reaction was secured, the stomach was full of the alcohol, and the assimilative function being re-established, the stimulant was rapidly appropriated, and we soon had a condition to contend with which was as dangerous and fully as difficult to overcome as the original trouble.

The chief object in the treatment of shock was to secure repose. This was best accomplished by the hypodermic administration of morphia, and in these cases it would be found necessary to use more than the ordinary dose to obtain the desired effect. If from any cause morphia should be contraindicated, other might be administered hypodermically in drachm doses, frequently repeated. In addition to this treatment attempts should be made to restore the temperature of the body to the normal standard by the application of dry heat. These applications should be made with as little disturbance to the patient as possible. The practice so frequently resorted to of applying cloths wrung out of hot liquids of various kinds, owing to the rapid evaporation, had an effect just the opposite of that intended. The use of mustard plasters, friction, electricity, etc., he disapproved of, as the excitement attending their application overbalanced any good they might accomplish.

If we failed to secure reaction by the maintenance of absolute quiet,

the judicious administration of sedatives and the application of heat in the proper manner, we certainly should not add to our chances of success by resorting to the numerous other applications recommended by various authorities as useful in this condition.

As to the time for operation in cases of shock: If the patient showed signs by increased strength of pulse and otherwise that reaction was being established, the sooner the operation was performed the better, for the administration of the anesthetic had a decidedly beneficial influence in promoting the condition of mind which we had been directing our treatment to secure. He thought a surgeon, unless he had so firmly established his reputation as to be out of reach of adverse criticism, would be very foolish to begin an important operation upon a patient so thoroughly under the influence of shock as to be insensible to pain and oblivious to all surroundings, and, consequently, in no need of an anesthetic.

Recent Paris Theses.—According to a recent number of the "Progresses médicaux," theses had been set down for the dates named as follows: July 21st: The Treatment of the Pedicle after Abdominal Hysterectomy, by M. Amiot; The Spontaneous Cure of Cold Abscesses and Congestive Abscesses, by M. Forget; The Torsion of Arteries and Secondary Hemorrhage, by M. Charlier; Pyæmia, by M. Brou-Ducalud; Compression of the Median Nerve by a Faulty Callus of the Lower End of the Radius, by M. Leclerc; The Treatment of Simple and Complicated Hare-lip, by M. Denise; Local Temperatures and Pulmonary Phthisis, by M. Mondon; Edemas of Nervous Origin, by M. Artus. July 22d: The Indications and Contra-indications for Ignipuncture of the Cervix Uteri, by M. Gonzalez; Aortic Insufficiency consecutive to Atheroma of the Aorta, by M. Cailliet. July 23d: The Treatment of Psoriasis, by M. Bellan; *Mal Perforant* in the Pre-ataxic Stage of Tabes, by M. Delay; Rupture of the Supra-patellar Tendon, by M. Emery-Desbrousses. July 24th: The History of Tracheotomy, by M. C. Bonnet; An Historical Essay on the Calculous Affection of the Liver, from the Time of Hippocrates up to that of Fourcroy and Pujol (1801-1802), by M. Muleur; Dilatation of the Stomach following Typhoid Fever, by M. Montoya; Non-albuminous Nephritides, by M. Delespierre. July 25th: Hyper-trophic Syphilitic Chancre, by M. Zwetich; Derangements of Nutrition in the Pre-ataxic Period of Tabes, by M. Portalier; The Treatment of Trichiasis, and on Extraction by Hotz's Method, by M. Giraud; Subcutaneous Gummata, by M. Basset; Polypoid Vegetations of the Stomach, by M. Bruneau. July 26th: Fractures in Syphilitic Subjects, by M. Gelle; The Amplitude of Convergence, by Mlle. Ellaby; Ruptures of the Uterus in Labor at Term, by M. Labusquière; Pregnancy and Parturition in Young Primiparae, by M. Peyrat. July 28th: Some Accidents of Congenital Atresia of the Prepuce and their Treatment, by M. Piussan; Surgical Intervention in the Treatment and Diagnosis of Tumors of the Bladder in the two Sexes, by M. Pousson; Chronic Osteoarthritis of the Knee, by M. Salmon; Medical Hydro-pneumopericardium, by M. Armesday; Syphilis of the Tonsils, by M. Pivaudran; Paralysis in the Course of Hepatic Colic, by M. Bourdichon. July 29th: Typhoid Fever with Influenza-like Onset, by M. Millée; Adynamic Dilatation of the Stomach, by M. Enrique de Argeaz; Insanity following Sunstroke, by M. Douy; The Development of the Wolfian Body and the Kidney in Vertebrates, by M. Baron; The Development of the Liver, by M. Vauthier; Blennorrhagic Erythemas, by M. Mesnet; Blennorrhagia as a Parasitic Affection, and its Treatment by Injections of Bichloride of Mercury, by M. Chameron; The Gastric *Bruit de Clopote-ment*, by M. Baradat. July 30th: The Electrical Treatment of Fibrous Tumors of the Uterus according to Dr. Apostoli's Method, by M. Carlet; Phlegmons and Deep Abscesses of the Temporal Region, by M. Pouillande; Exostoses of the Subscapular Fossa, by M. Mesnard; Deep Varices of the Lower Limb, their Signs and the Accidents to which they may give rise, by M. A. Gautier; The Treatment of certain Diseases of the Eyes by Igneous Cauterization, by M. Letellier; The Treatment of Exophthalmic Goitre with Iodine and its Compounds, by M. Galup; Lymphadenoma of the Bones from a Clinical Point of View, by M. Périer; Spasmodic Jaundice, by M. Mendiboure; Chorea Gravidarum, by M. Gayraud. July 31st: The Discovery of the Bacillus of Tuberculosis in other Products than the Expectoration, by M. Aguet; Tropic Troubles in General Paralysis, by M. Ramadier; The Course and Dura-

tion of Locomotor Ataxia, by M. Lucas; The Functional Independence of the two Cerebral Hemispheres, by M. Berillon; Dislocations of the Humerus complicated with Fracture of the Upper Part of the Bone, by M. Oger; Fatty Matters in the Urine, with a Bibliography of the Entozoa of Chyluria, by M. Monvenoux; The Hypnotic and Sedative Action of Paraldehyde in the Different Forms of Insanity, by M. Nercam; Phlegmasia Alba Dolens in Typhoid Fever, by M. Cazauiellin; The History of the Protection of Childhood in Rome, by M. Moutier. August 1st: Embryotomy as regards the Sufferings it causes the Fetus, and the Means of avoiding them, by M. Kh'ntiriann; Filamentous Insertion of the Cord, by M. Bessière; Pregnancy and Labor in Old Primiparae, by M. Courtade; The Complications of Cancer of the Uterus, by M. Caron; Experimental Progress in the Study of the Functions of the Brain, by M. Levillain; The Surgical Treatment of Obstinate Neuralgia of the Inferior Dental Nerve of Peripheral Origin, by M. Ricoux; Lithiathy in Children, by M. Ducasse; Blennorrhagic Cystitis, by M. Leprevost; The Surgical Treatment of Purulent Pleurisy in Children, by M. Branthomme; The Action of Digitalis in Diseases of the Heart, by M. Fleurot; Reflex Neuralgias of Dental Origin, by M. Ferrier. August 2d: Hydatid Cysts of the Base of the Skull, by M. Odile; Gangrene of the Limbs in the Course of Chronic Nephritis, by M. Grouillard; Cancer of the Pleura, by M. Vinet; Aseptic Catheterization in Lying-in Hospitals, by M. Prieur; The Infantile Pelvis considered in regard to its Form and the Relation between the Diameters of the Superior Strait, by M. Turquet; Puerperal Paralysis of Eclamptic Origin, by M. Bernard; The Mechanism of Death by Intense Electrical Currents, by M. Grange; The Use of Chloroform in Tracheotomy, by M. Soyer.

The Inebriates' Home at Fort Hamilton.—According to the sixteenth annual report of the president of this institution, just issued, there was one patient fewer treated in 1883 than during the previous year. The period of treatment for each individual was about the same, or about four months. With the present capacity of the building, which has been filled to overflowing the greater part of the year, it was impossible to treat a larger number of individuals, and it has therefore been necessary to refuse many worthy applicants for admission, owing to the want of adequate accommodations. This condition demonstrates the fact that the institution has been and is of great value, and that its benefits are desired by a larger number of people than can be cared for.

Since the construction of the building there has been no enlargement or increase in its capacity, and, although when it was built it appeared to be ample, the necessity now seems urgent that some way or means should be devised whereby its capacity may be materially increased, or its usefulness will be considerably restricted. There is still constant demand for accommodations for females belonging to the better class, for which there is absolutely no room; and within the president's knowledge there is no place either in this State or in the United States where such persons can be properly and judiciously treated.

From these facts it would appear that the institution is an absolute necessity, and that without it a numerous class would be forced into the penal institutions, although not deserving of punishment but yet in need of some restraint, to their great detriment, and at an increased cost to the community.

Mellin's Food for Infants and Invalids.—A recent analysis by Mr. G. W. Wigner, the President of the Society of Public Analysts of England, throws considerable light, not only on the composition, but on the physiological action of this popular preparation. It appears that it contains nearly 87 per cent. of dextrin, maltose, etc., soluble in cold water.

As Mr. Wigner points out, it is not a mere starch or sugar food, but a soluble preparation, containing those nitrogenous and phosphatic principles which contribute largely to the growth of bone and tissue in young children. Being thoroughly malted, it is not only readily digestible itself, but actually assists in the digestion of milk and other foods with which it is mixed. It must of necessity be of great value in the case of feeble infants who can not digest ordinary starchy foods. Mr. Wigner's analysis has evidently been performed with great care, and is of much interest."—*British Medical Journal*, May 3, 1884.

Lectures and Addresses.

ON THE DEVELOPMENT OF PHYSIOLOGICAL CHEMISTRY AND ITS SIGNIFICANCE FOR MEDICINE:

AN ADDRESS DELIVERED AT THE CELEBRATION OF THE
OPENING OF THE NEW INSTITUTE FOR PHYSIO-
LOGICAL CHEMISTRY OF THE IMPERIAL
UNIVERSITY OF STRASSBURG,
FEBRUARY 18, 1884.

By PROFESSOR FELIX HOPPE-SEYLER.

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(Continued from page 171.)

In the most recent times different hypotheses bearing on the chemical structure and peculiarities of living protoplasms have been published; they do not, however, taken together, agree with the known facts. Their mechanical and chemical behavior, so far as they have as yet been investigated, force us to the supposition that *one and the same protoplasm, according to the influences which from without are brought to bear upon it, may form [darstellen] two entirely different bodies*—different in chemical structure and in action on other organic substances which come into relation with the same, and also in attraction for water.

The protoplasms further effect chemical changes through which, on the one hand, fermentative decompositions, and, on the other, anhydrides, are formed. Both processes stand in such decided opposition to each other that they can not proceed at the same time from one and the same substance. In the plants and animals of higher organization we can ascribe to one cell the one function, and to another the other. In the lowest unicellular organisms this is not possible: in these, both processes must go on in the same protoplasm; they form albuminous substances, fats, glycogen, or cellulose, and such like, and also break up these substances.

It would appear that it is observation of just these lowest, simplest forms of life that enables us to form the clearest conceptions.

Beer yeast-cells in a saccharine fluid change grape-sugar into alcohol and carbon dioxide in the complete absence of free oxygen, and can continue these processes for months without either growing or multiplying themselves, when, indeed, the food-supply is abundantly present and the temperature favorable. According to certain observers, the yeast-cells do grow and multiply, but *there is no doubt that it must be admitted that growth and multiplication are insignificant.*

A portion of the same yeast-cells, brought into a saccharine fluid in the presence of oxygen, forms little or no alcohol, separates some carbon dioxide, with absorption of oxygen, grows, and, moreover, multiplies abundantly under similar conditions of temperature and nourishment.

The bacteria of decomposition [*Fäulnisbacterien*], brought into watery extracts of flesh in the presence of oxygen, decompose albuminous matters, creatin, sugar, and lac-

tic acid into leucin, hydroparacumarsic acid, indol, skatol, ammonia, carbon dioxide, hydrogen, and sulphured hydrogen.

They are motionless and do not multiply; however, the latter is denied by some observers.

The same bacteria, under precisely similar conditions but with oxygen present, form no hydrogen, no organic decomposition products; only carbon dioxide, water, and ammonia; *they multiply abundantly and are in lively motion.*

The formation of anhydrides, to be recognized in the growth of organisms and their multiplication, happens either only, in the main, in the presence of oxygen, or, at least, much more abundantly than without it. However, oxygen can neither of itself form anhydrides nor be the sole cause of the movements of the bacteria.

Though oxygen is of itself powerless to act as an oxidizer in such cases, yet, in the presence of nascent hydrogen, it does possess such power; and this latter is always the case in putrefactive processes. There is an opinion, as yet very widely diffused, that these lower organisms comport themselves throughout otherwise than the higher plants and animals. Differences not a few are to be observed, but, just as these lower organisms contain the same substances in their protoplasm as the highest (globulin substance, lecithin, cholesterin, nuclein, and potassium) so do they in their chemical processes show a remarkable agreement in the fundamental types. If we suppose (and there is no fact opposing it) that also in the highest organisms indifferent oxygen in the same manner as in the lowest succeeds in oxidizing, so might the general protoplasmic phenomena in plants and animals be thus formulated:

Distinction must be made between (1) the protoplasm incapable of stimulation, as it continues to be in the absence of oxygen, acting with a ferment-like decomposing power on albuminous matters and many other substances, and (2) the protoplasm capable of stimulation, of less density than the first, of greater capacity for attracting water and not inciting fermentation. In the presence of water the second is changed into the first, through addition of the elements of water in chemical combination, in consequence of the weaker or stronger shocks of the so-called stimulation, through different modes of motion—electrical, thermal, chemical, or mechanical motion. The first protoplasm is again changed into the second BY THE PRESENCE OF OXYGEN, since, by the decomposing action of the first protoplasm, oxygen is rendered active, and through the active oxygen the second anhydriated protoplasm arises. If, under such circumstances, substances present themselves which can be easily anhydriated, they pass over into anhydrides. The anhydride formation happens, accordingly, through the reformation of anhydride protoplasm in consequence of the influence of active oxygen on the protoplasm with ferment-like action.

It would lead too far into details to demonstrate the agreement of these hypotheses with all the results of observation on them *in the entire realm of the organic world which they include.* Let it suffice to choose from very different classes of organisms individual representatives, and demonstrate their agreement.

What I have already said of beer yeast-cells and bacteria is in unison with the hypotheses, so I will not repeat.

The muscles of men and vertebrates, through stimulation, change in density, break up glycogen, and form lactic acid; the latter is, however, in the presence of oxygen, oxidized; carbon dioxide and water are formed in the proportion the carbohydrates furnish, and in correspondence with the strength and duration of the stimulation. The change into the stimulated condition follows also in the absence of oxygen. The removal of oxygen calls into existence lasting tetanus (poisoning by hydrocyanic acid, rapid death by bleeding, hanging, etc.). On the other hand, under normal presence of oxygen, in order to maintain a stimulated condition in some measure lasting, continuous repetition of the stimulus is necessary, since the active oxygen at once forms the anhydrated protoplasm.

In glands, in consequence of stimulation, a secretion of a watery fluid follows, which can have only chemical, not physical, causes, in that it is independent of the blood-pressure, and the fluid secreted does not contain those salts which, in all the transudations, pass over from the blood in definite proportions.

With this secretion abundant formation of carbon dioxide and of warmth takes place at the same time. Very clearly were these conditions observed in the secretions of the insect-eating plants, as so admirably described by Charles Darwin.

Mechanical phenomena of motion [*Bewegungserscheinungen*] in plants, especially the remarkable movements of the petioles of *Mimosa pudica*, are of the same nature as the secretion of water from protoplasm, in consequence of the stimulation already mentioned. That the vacuole formation in numerous protoplasts, also in the *Amœba* itself, arises from a similar secretion of watery solution from the protoplasm in consequence of stimulation, is highly probable. The mechanical movements of *Amœba*, etc., toward the point of stimulation is explicable only through these hypotheses.

Numerous and very different in kind are the observations on higher, especially warm-blooded animals, which have afforded the demonstration that with the prevention of the access of oxygen to the organs the stimulative capacity sinks, while, in consequence of this hindrance, the extent of the decomposition of tissue and of chemical interchange rises.

When a stream of blood containing oxygen is conducted through the living kidneys, the union of glycocholl and benzoic acid which takes place has been shown to be an anhydrating process. The opposite process, however—viz.: the splitting up of hippuric acid and similar compounds under addition of water in the living organs—is observed.

Presumably the last process takes place also without the presence of oxygen, and can be effected in the protoplasm incapable of stimulation.

Let these intimations suffice to indicate how in one realm of physiological chemistry—and that the largest—results unite to induce further investigation of problems becoming ever more comprehensive; and how, further, all living beings, of form and life-phenomena the most widely

different, appear to owe their fundamental structure to an original chemical organization, with properties common to them all.

In the preface to his "Animal Chemistry," Liebig, in 1842, said: "The new chemistry has, with all its discoveries, furnished only insignificant service to physiology and pathology, and no one can deceive himself as to the causes of this failure who takes into consideration that all the methods introduced into the realm of inorganic chemistry, the knowledge of the behavior of the simple bodies, and the compounds that might be made in the laboratory, could be brought into no sort of relation with the living animal body and the character of its components." Since that time this has been changed; but it would be vain to reckon on a further advance in physiology from the side of the chemist when the questions of biology lie so very far away from him—questions whose answers bring for the theoretical chemist but very little profit. While theoretical chemistry and chemical technique are closely linked with one another—while the one derives great advantage from the other—the relation to physiology and to the whole of medicine is entirely different. But even the technique has found it necessary to take the solution of certain problems in hand, with what good or ill luck might follow.

For the chemical manufacture of dye-stuffs, for the sugar industry, for beer and brandy manufacture, there now exist special, and in part excellently directed, laboratories, in which for special objects these branches are practiced and partially taught. In all civilized countries there are now laboratories for the objects of agriculture. Physiological and pathological chemical laboratories have also been established, but, with very few exceptions, they have restricted means and no independence. The importance of chemistry for the development of physiology and pathology did not escape Virchow's sharp ken. He established in 1856 the first better-endowed and tolerably independent laboratory in his new pathological institute in Berlin. In Munich, through Liebig's influence, a series of diligent researches was made on food and nutrition [*Ernährung und Stoffwechsel*]. In Tübingen the laboratory for applied chemistry was restricted almost exclusively to the subject of medical chemistry. Several of the ablest physiologists, such as Brücke and Pfleger, applied themselves with lively interest to the solution of the problems of physiological chemistry, and encouraged and advanced this science.

In the Physiological Institute of the Berlin University, opened a few years ago, there is a suitable laboratory for physiological chemistry, which has already done good service alike to teaching and to science.

Though, after the example of Frerichs, several clinicians fostered physiological and pathological chemical investigation, yet in most German universities the chemistry of physiology has not received the consideration and advancement it deserves.

It can be said in praise of the physicians of all times, and not in small numbers of those of the last ten years, that they, with much attention for the objects of the diagnosis and treatment of disease, sought to apply what science and the technique supplied. Astonishing must it be

then, that the great majority of the physicians in the most recent times felt coldly enough over the advance of chemistry in general—much more so than was the case at an earlier period, and that within my recollection—while a small minority kept their eyes fixed on it with great interest.

One or another will perhaps say that these advances may be of really great significance for the science of medicine, but of little applicability to the practice of medicine. With regard to numerous results of the anatomical and physico-physiological investigations, and such as have been spoken of above by myself, bearing on the chemical behavior of living cells in general, it is not to be expected that they should have a direct bearing on practice. But quite different is it with very many results of the most recent investigations of physiological chemistry. So can I not understand how at the present day a physician can recognize, follow in their course, and suitably treat, diseases of the stomach and alimentary canal, of the blood formation and decomposition, of the liver, kidneys, and urinary passages, and the different forms of poisoning—how he can suitably regulate the diet in these and in constitutional diseases—without the knowledge of the methods of physiological chemistry and of its decisions on questions offering themselves for solution, and without practical training in their application.

Is it possible we must conclude that there is an overburdening of the medical student while following out the curriculum, and that this is the cause of the insufficient attention in general paid to the chemical problems of medicine?

I am far from denying an overburdening; it exists, in fact, in high degree, and the lengthening of the term of study (one semester) now in force does not suffice to obviate it. This overburdening, however, is not the only cause, nor is it distributed uniformly over the different departments of study.

The principal cause of this unsymmetrical distribution lies in the form which the medical curriculum has taken in the last ten years. The really valuable results in the great field of normal and pathological investigation which have been achieved through the improved microscopes of the last four decades; the triumphant victory won by the microscope for pathology in the direction of pathological anatomy over the earlier prevailing but insufficiently grounded philosophical physiology; the insight into the significance of the lowest fungi, also achieved through the microscope—have in medicine lent to the anatomical method of demonstration and investigation undue weight, which, at first useful in explanation of obscurities, became gradually more and more pressing, even crushing, on the remaining branches of the medical curriculum.

The skeptical fanaticism of the injudicious champions of the Vienna school, which sought to rob the physician of all belief in tradition, has also in its after-working exerted a paralyzing influence on chemical and therapeutical efforts. Amid this sea of doubts the anatomical facts appeared to be the only thing that remained firm. On this was joined the transformed but very meager pathology. For inde-

pendent clinicians this state of things could not suffice; the sterility ensuing through this sovereignty of morphology could not remain hidden from the penetrating. Many clung with lively interest to the means which the researches on nutrition [*Stoffwechsel*] furnished for the solution of clinical problems. But insight into the hidden springs and processes of life remained veiled. That they are chemical processes we know right well, but their solution requires the most painstaking work. We trust well to the certain fundamentals of chemical investigation; but only slowly, and contending against the most diverse hindrances, can we penetrate into the fine machinery which in healthy and in diseased beings determines life [*das Leben ausmacht*]. On other than chemical paths do we not advance. Who will deny that?

We should not object that pathological investigation and not the physician's practice has to do with this. Every observing physician must admit that in this relation there exists no difference.

The commercial physician [*der ärztliche Geschäftsmann*] alone can content himself with mere patterns; for the true physician every genuine case does and must furnish a special study.

A short time ago one of the most active clinicians,* Leube, raised a warning voice against the underestimation of chemistry for medicine. *That to it the future of the science of medicine belongs can with certainty be discerned.*

After what has been said, there remains no doubt as to the aims which the erection of this spacious new structure leads us to strive to achieve. It shall be a place for the practice and study of physiological chemistry in every direction bearing on medical science. The great value which in recent times, certainly rightly, is attributed to hygiene and the very numerous necessary relations which this realm of investigation and teaching have in common with physiological chemistry, cause it the more fitly to appear that, for its practical study, space and arrangement should be made in this institute, as in great part the subjects not wholly microscopic or technical belong also to physiological chemistry, and so can never be better managed than in an institute set apart for the latter science. To avoid collision in instruction, separate rooms for work in physiological chemistry and in hygiene are provided.

Easy Liquefaction of Oxygen.—It will be remembered that Messrs. Wroblewski and Olszewski some time ago succeeded in liquefying oxygen by the use of ethylene. M. Cailletet has searched for and found a body having a still lower boiling point than ethylene, and by means of which oxygen can be very readily liquefied. This substance is simply formene or marsh-gas, which, under slight pressure and cooled in ethylene, boiling under the ordinary atmospheric pressure, is resolved into an extremely mobile, colorless liquid, which, in passing again into a gaseous state, causes such a lowering of temperature that oxygen in its neighborhood is immediately liquefied.—*Lancet*.

An Italian Society of Dermatology and Syphilography will be formed, according to the "*Gazzetta degli Ospitali*," at a meeting to be held at Turin on the 10th, 11th, and 12th of September.

* W. Leube, "On the Significance of Chemistry in Medicine," Berlin, 1884.

Original Communications.

THE EFFECTS OF SEA AIR

UPON

DISEASES OF THE RESPIRATORY ORGANS,

INCLUDING A STUDY OF THE INFLUENCE UPON HEALTH
OF CHANGES IN THE ATMOSPHERIC PRESSURE.*

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WHAT are the peculiar properties of sea air, and in what respect does it differ from the atmosphere upon mountains and in other localities away from the sea? These are questions which it is very necessary to have clearly answered before any intelligent decision can be reached as to the probable result in any given case of an ocean voyage or a sojourn at the sea-side. The answer to them involves a study of a purely scientific character, yet one of the utmost practical importance to physicians.

Ozone, or oxygen in an active electrical state, is an important ingredient of the atmosphere at the sea-shore as well as in mountain districts, while it is nearly absent from the devitalized air of large cities. This is the most powerful oxidizing agent known, and its presence unquestionably greatly enhances the vigor and activity of all the vital processes. But both the medical profession and the general public have been made familiar with the value of ozone, to which almost magical virtues have been ascribed.

Another noteworthy property of sea air, which is less generally understood and appreciated, is its greater density as compared with the atmosphere of most inland places which have a considerable altitude. This increase of density produces numerous effects upon the human body. It enables more oxygen to be taken into the lungs with each inspiration, and thus increases oxidation. The atmospheric pressure at the sea level has been computed to be about fifteen pounds to the square inch, which amounts to from fourteen to sixteen tons upon the whole surface of the human body. At an elevation of three and four tenths miles this pressure is only one half as much. At even a few hundred feet above the sea the pressure is materially less. Now, the change from a high or even medium altitude to the sea-side involves, as one of the most direct and positive effects, an increase of the pressure upon every square inch of the body. To this fact is largely due the extraordinary feeling of buoyancy and vigor as well as the stimulation of all the nutritive processes which are experienced upon going to the shore. *Per contra*, it is a well-known fact that the effect of the lessened pressure in very high altitudes is distressing to human and animal organisms, and finally destructive to them, as has been demonstrated by aeronauts and travelers who have explored the higher mountains. Vertigo, headache, rapid pulse, and loss of appetite are among the earlier symptoms which, as the experimenter goes still higher, are intensified until finally hemorrhages from under the nails, the eyelids, and other parts, together with severe dyspnea, show the increasing peril to life.

The congestion which may be produced in a part by a marked lessening of the atmospheric pressure upon it is best shown by applications of dry cups or of the mechanical contrivance known as Junod's boot.

A person, upon being conveyed rapidly, as by rail or balloon, to a very high elevation, experiences a somewhat similar congestion of the entire exterior of the body, including the respiratory passages, which, even to their ultimate ramifications in the alveoli of the lungs, are to be considered as exterior parts, so far as regards their relation to changes in the atmospheric pressure. In other words, the interior of the lungs, being in direct communication with the air, is affected by changes in its density coincidentally with the surface of the body. Hence the frequency of hæmoptysis, as well as other hæmorrhages, and the danger to consumptives in very high altitudes. This danger is greatest, of course, during the first few hours or days after being conveyed to such a region, before the pressures upon the exterior and within the interior of the body can become equalized. In passing from the higher to lower levels, and especially to the lowest, which is at the shore, these conditions are exactly reversed. The atmospheric pressure being then increased upon the surface and within the lungs, to which the air has direct access, there is an efflux of blood from these parts to the truly internal organs of the body, such as the brain, stomach, liver, intestines, and kidneys.

This moderately augmented blood-supply increases the functional activity of all such parts, while the external organs, as the skin and the whole respiratory tract, which receive a somewhat diminished blood-supply, find abundant compensation in the directly stimulating effect of the denser air. There being besides a greater proportion of oxygen in its most energetic form, the process of oxidation is rendered more active. It follows, then, that all changes of climate involving decided changes of altitude disturb at first the balance of the circulation.

Changes from a low to a higher level tend to cause a temporary congestion of the respiratory tract and external parts, while the contrary change, such as that to the shore, in so far as the altered atmospheric pressure is concerned, tends to lessen congestion or inflammation in the bronchial tubes or lungs, but may produce a temporary plethora of the interior organs.

A very interesting study of the results of an atmospheric pressure artificially increased, as in coffer-dams, to three or four times the normal, has been made by Dr. Andrew H. Smith, of New York. He found that numerous alarming and sometimes fatal symptoms were developed in persons exposed for several hours to such enormous pressures but only after they had returned to the ordinary air.

Another result of the greater density of the atmosphere at the sea level is that it has an augmented capacity for absorbing and retaining the heat of the sun. The temperature has been found to fall one degree for every four hundred feet of altitude. Besides, a radiation of heat is constantly taking place from such a large body of salt water as the ocean, which is warmer in winter and cooler in summer than the surface of the land adjacent. Hence the air over the sea or at the shore is usually warmer in winter,

* Read before the American Climatological Association, May 3, 1884.

though, for the reason just stated, cooler in summer than that of interior places in the same latitude.

Another peculiarity of a strong sea air, such as is breathed on ship-board, and at the shore during a sea breeze, is that it is always moister than the atmosphere of inland places, and more or less impregnated with saline particles.

Much is said about the relative humidity of various sea-side places, but it may be accepted as an axiomatic fact that air blown directly off the sea anywhere is much moister at the water's edge than the air farther inland.

Sea-side towns located at the extremities of capes, where the wind blows off large bodies of water on nearly all sides, will, of course, have a more humid air than those not so exposed. Thus Atlantic City has been found experimentally to have a much drier air than most sea-shore resorts. This may be partly due to the trend of the coast at that point, and to its distance from the mouth of any large river, since winds often seem to focus at the mouths of rivers, and the stronger the winds from the seaward the greater the degree of moisture. Furthermore, the large extent of very dry, sandy barrens directly behind the town causes the land breezes, which always prevail during a part of the time at every point upon the coast, to be particularly devoid of moisture. Let it be understood, then, that sea air, whether at the tropics or at the extreme north, is always a distinctly moist air, and, notwithstanding the prevalent assumptions about the value of dry air in the treatment of nearly every disease, there is no doubt that to the greater humidity of sea air are partly due some of the peculiar advantages which clinical experience has shown to result from a residence at the sea-shore.

It is a wet soil rather than a moist air which is so injurious to health, and a considerable portion of our Atlantic coast, including that bordering the southern part of New Jersey, has an exceedingly dry, porous, sandy soil, which permits water to rapidly sink away, except during spells of very rainy weather.

The mucous membranes of the respiratory tract, then, are, during an ocean voyage constantly, and at the sea-shore intermittently, bathed with an alkaline and alterative spray, which, in case of the sojourner at the sea-side, can be made strong or mild accordingly as he spends most of his time at the water's edge or some hundreds of feet farther back.

Still another important consideration is that sea air—i. e., air blown directly off the ocean—is pure in the sense of being free from all noxious effluvia, and especially from the bacteria which are now believed to cause so many formidable diseases.

Thus, to briefly summarize, it has been shown that sea air contains more ozone, is denser and therefore more invigorating, as well as moister and purer, than the atmosphere of interior localities; that it is also warmer in winter and cooler in summer; and, besides, that it contains in suspension a very appreciable amount of saline particles, which are alkaline in reaction, and possessed of alterative virtues. It has been shown, further, that the greater atmospheric pressure at the sea level exerts certain effects upon the local blood-supply of various organs of the body.

These facts being admitted as well established, the

therapist should, on *a priori* grounds, expect certain definite effects from sea air upon patients afflicted with diseases of the respiratory organs. We might expect (1) in all suitable cases a general tonic influence, with increased appetite and improved assimilation; (2) we should look for a direct and positive stimulant and alterative impression (sometimes, doubtless, too strongly stimulant) upon the mucous membranes of the upper air-passages, with, probably, the same effects in a less degree upon the bronchial tubes and alveoli.

A large number of invalids, suffering with the various affections of the respiratory tract, have been seen by me at Atlantic City. Chronic nasal catarrh is often temporarily benefited at that place, particularly in summer, when sea-bathing can be indulged in. The effects of a residence there during winter, as well as summer, have occasionally produced considerable amelioration of that stubborn malady through the improvement in the general nutrition. But, so far as my experience goes, no actual cures of the disease have occurred without the help of local treatment.

Chronic laryngitis is not uniformly improved by sea air, though it is frequently benefited by a prolonged stay at the shore, and is occasionally cured there with very little treatment.

Volumes could be filled with the testimony of authors as to the value of sea air in chronic bronchial affections. Some make a distinction in this regard between dry and moist bronchitis, maintaining that persons with the former may expect most benefit. This does not accord with my observations. I have found all forms of chronic bronchitis, except those associated with advanced cardiac disease, improve at the shore, as a rule, though there have been exceptions. In numerous cases persons, who at home regularly suffer from winter coughs, have escaped almost entirely at the locality mentioned.

Hay fever is more of a neurosis than an actual lesion of any respiratory organ; but it will be in order here to note that sea air, as exemplified at Atlantic City, often proves remarkably curative in this affection.

In spasmodic asthma the results of sea air might be expected to vary with the degree of irritability of the respiratory centers and bronchial membranes. Clinical experience, in like manner, shows variable results. Many subjects of spasmodic asthma have entire immunity at the same sea-shore resort, while other cases of apparently like character are aggravated. As has long been observed with this singular affection, there seem to be no means of determining in advance what the effects of any particular climate will be upon any individual case.

In vesicular emphysema there has been observed at the shore, as would be expected, a marked palliation in consequence of the greater density of the air and its increased proportion of oxygen.

Dr. Bartholow says: "Of all the means hitherto proposed for the relief of emphysema, nothing has approached compressed air in effectiveness. Indeed, this is the only scientific remedy which has as yet been brought forward for the treatment of emphysema. . . . The object of compressed air is to relieve the breathing by supplying more oxygen,

and it effects an equalization of the blood in the two systems by redistributing the pressure. By retarding the breathing and the actions of the heart, the contractions are firmer and the cavities are better emptied. The improved condition of the blood, the result of a better supply of oxygen and increased excretion of carbonic acid, induces a better state of digestion and assimilation. By breathing compressed air the pressure is transferred from the venous to the arterial system, and, while the amount of blood on the right side is diminished, on the left it is increased."*

Pre-eminently important among the diseases of the respiratory tract are those several lesions which are conveniently grouped under the popular term consumption. These include chronic catarrhal pneumonia or caseous phthisis, fibroid phthisis, and tubercular phthisis. I have noted the progress at Atlantic City of numerous cases of each of these forms of lung disease. My observations have led me to the conclusion that, as a rule, consumptives in the early stages, before softening has begun, do well at the sea-shore, at least in that locality. The great majority of such patients have progressed favorably during their stay there. Quite a number of persons having a portion of one lung consolidated have become permanent residents of the place on account of the marked improvement in all their phthisical symptoms produced by the climate. In a considerable proportion of the cases which have continued under observation, the diseased process seems to have been arrested. On the other hand, where there has been much irritative fever with profuse night sweats at the time of their going to the shore, the patients have not done so well.

This has been no doubt largely due to the fact that such invalids usually insist upon walking or being carried out daily, even when the most feverish. They and their friends have nearly always gone to the shore strongly impressed with the idea that they must spend as much of their time as possible in the open air, and especially upon the beach within the influence of the salt spray, whereas such acute exacerbations as just referred to demand, above all else, perfect rest, soothing treatment, and a not too stimulating air. Furthermore, the friends of the consumptive are apt to believe that, next to walking or driving a large part of every day upon the beach, the one thing needful is to force as much strong food into the stomach as it can possibly retain, whereas during the continuance of hectic fever in phthisis, as in other febrile conditions, a carefully selected diet, not exceeding either in quality or in quantity what can be easily digested and assimilated, is absolutely indispensable to a cure, or even improvement. When such patients have been willing to submit to a rational treatment at the shore, including rest in bed during the periods of excited circulation, the febrile symptoms have often been controlled, and then, during the quiescent period ensuing, exercise in the open air with judicious feeding and a generally stimulating treatment has proved serviceable.

A few exceptional cases of phthisis which had advanced to the formation of cavities have been observed to pursue a favorable course at Atlantic City. These have been of a

slow, chronic type, and the patients have been under persevering treatment, including usually a somewhat active counter-irritation over the diseased portion of the lung. They have been persons possessed of strong hearts and good stomachs, capable of tolerating cod-liver oil and the hypophosphites.

Under less favorable conditions, however, consumptives in whose lungs cavities have formed go down rapidly there as elsewhere. One case may illustrate the different progress at the shore of phthisis in its early and late stages: A young lady of eighteen went from New York to Atlantic City in the spring of 1882. Dr. Loomis had seen her in consultation, and diagnosed consolidation at one apex. She improved remarkably during a sojourn of a month or more, gaining in flesh and strength and almost losing her cough entirely. She spent the summer in some mountain region and returned to New York in the fall. The following March she went to Atlantic City in a deplorable condition. She had a cavity at one apex, and a recent patch of infiltration at the other. There was profuse purulent expectoration, with high fever, which had been much aggravated by even the short journey from New York. Besides, the stomach had broken down and there were indications of tubercular deposit in the bowels. She sank rapidly, and died within three weeks.

My observations in this regard are in the main confirmatory of the statements of the leading modern authorities on climate in the treatment of phthisis. Nearly every recent author of any note who has made a study of the subject bears testimony to the value of sea air in pulmonary disease when resorted to in time. Dr. Madden, in his "Health Resorts of Europe and Africa," says: "With few exceptions, the localities resorted to in winter by consumptive patients are situated on the sea; and certainly this predilection is well founded, for such situations are more equable in temperature, being cooler in summer and warmer in winter, and less subject to sudden transitions or great extremes of temperature than inland places. As a general rule, therefore, I would select a locality on the sea-shore for the residence of consumptive patients."*

Professor John Hughes Bennett, † in Reynolds's "System of Medicine," recommends numerous climates as particularly suited to consumptives, all of them being either sea-coast regions or islands in the sea.

Dr. John Parkin, ‡ in his work on "Climate and Phthisis," condemns most of the southern resorts prescribed by writers, and maintains that cold climates rather than warm ones are the best for phthisis, yet has a kind word to say in favor of several of the English sea-coast towns as offering a prospect of benefit to consumptives during certain times of the year.

Tanner,* in his "Practice of Medicine," first cautions

* "Health Resorts of Europe and Africa," by Dr. T. M. Madden, Philadelphia, Lindsay & Blakiston, 1876, p. 7.

† "System of Medicine," by Dr. J. R. Reynolds, Philadelphia, H. C. Lea, 1880, vol. ii, p. 137.

‡ "Climate and Phthisis," by Dr. John Parkin, London, Longmans Green & Co., 1875.

* "Practice of Medicine," by Dr. T. H. Tanner, Philadelphia, Lindsay & Blakiston, 1874, p. 503.

* "Practice of Medicine," by Dr. R. Bartholow, New York, D. Appleton & Co., 1881, p. 393.

against a change of climate after the beginning of softening or the formation of cavities, and then proceeds to recommend as desirable residences for consumptives a long list of sea-side places.

To go further back, the illustrious Laennec,* the father of auscultation, himself bore emphatic testimony to the usefulness of sea air in phthisis.

Dr. B. W. Richardson, in his "Preventive Medicine," says: "The influence of a seafaring life as a preventive of phthisis has been a matter of important observation. In 1856, Boudin showed that while the deaths from consumption in the British army were, in the Line, 8.9 in 1,000 men, and in the Guards 12.5 in 1,000 men, in the British navy, 1830 to 1856, inclusive, the deaths from phthisis were 1.76 in 1,000 men."†

These citations might be almost indefinitely extended, but the foregoing are enough. The accumulated experience of all the centuries back to the time of Hippocrates points to the conclusion that sea air is, in some measure, a prophylactic against pulmonary phthisis; that it may prevent the development of incipient cases under favorable conditions, and that it often proves beneficial in the disease even when fully established, though not usually advantageous after softening begins.

A CASE OF EPITHELIOMA OF THE ANO-RECTAL REGION,

WITH REMARKS.‡

By CHARLES R. CRANDALL, M. D.,
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Mrs. W., aged thirty-four, married, was the mother of two children, aged, respectively, seven and ten years. Her family history was good in every respect; her mother died of "asthma" (†) at the age of sixty-six; her father is still living at the age of seventy-seven. She never lost any brothers or sisters. Always had good health until she began to bear children. At the time of her last confinement, seven years ago, she had a tedious getting up, and has never enjoyed perfect health since.

In January of 1883 she had an attack of acute ovaritis, characterized during the onset by repeated chills, fever, vomiting, rapid pulse, swelling and pain in the region of the left ovary, and prostration. With this attack she was sick about two weeks, convalesced slowly, and never seemed to regain the degree of health which she had previously enjoyed.

Early in the summer she went into the country, where she remained nearly three months. Upon her return she reported for treatment, but sadly changed in general appearance. Her complexion was pale and sallow, and she had lost about twenty pounds of flesh. About the time she went into the country she began to suffer from indigestion, then became unusually constipated, piles developed which caused her great pain day and night, and her general strength became impaired.

Upon inspecting the anus I found three large, hard, painful external hemorrhoids which were entirely covered with integument. I instituted treatment as was indicated and urged the

importance of due preparation, and, as soon as possible, an operation upon the anus. Later on it was noticed that the hemorrhoids were not influenced by ordinary treatment, defecation was difficult and painful, bleeding occurred at each stool, and the inside surfaces were apparently ulcerated. Owing to the excessive tenderness of the parts, thorough rectal examination was not successfully carried out. Delays ensued until it was decided that she should submit to an operation on the 3d of December, 1883.

With the assistance of Dr. Gordon, surgeon to the Maine General Hospital, and Dr. B. B. Foster, the patient was etherized and was placed in the lithotomy position. Thorough examination of the rectum revealed the presence of incipient epithelioma of the ano-rectal region, extending upward nearly two inches. To the touch the sensation was abnormal, but much unlike the hard, tough, infiltrated structure so often met with in malignant growths of the rectum. The lower portion of the rectum appeared dilated, and the mucous surface was irregular, roughened, vascular, and somewhat ulcerated. It would be nearly correct to state that the tissues were soft and movable, but that at points there was a moderate degree of thickening. It appeared as if the growth had developed in papillary eminences and irregular patches, of variable size and thickness, upon the mucous membrane, and these were more or less scattered all around the ano-rectal surfaces, but, perhaps, were largest and most numerous upon the vaginal side. The patches were slightly elevated, some of them abraded and highly vascular, doubtless causing the pain and bleeding she had experienced during defecation. As yet there did not seem to be any invasion of the deeper structures.

After careful investigation, it was considered advisable for Dr. Gordon to excise the entire circumference of the anus down to the sphincter muscle and dissect out all the mucous membrane and diseased tissue of the lower end of the rectum upward to the extent of two inches. This done, bleeding controlled, and the surfaces cleansed with hot water, the edges of the mucous membrane, or, as Allingham says, the stump of the rectum, was then drawn down and attached to the skin of the anal opening with twelve silk sutures.

The treatment then instituted consisted of a hypodermatic injection of one fourth of a grain of morphine every six hours, and five grains of quinine every six hours. I had the wound cleansed every six hours with tepid water, and dusted the surface with iodoform. At the end of the first twenty-four hours her pulse was 95, her temperature 98.5° F., and she was perfectly comfortable and cheerful. Much the same line of treatment was persevered in for three days, and then gradually discontinued. The sutures were removed on the fourth day, when it was found that partial union had taken place, and that the general appearance of the wound was most satisfactory. At the end of the first week her bowels were moved by the use of the solution of the citrate of magnesium and an enema of warm water. The first movement was attended with some pain and slight bleeding. Afterward her bowels were kept slightly relaxed, and the movements were almost painless. She steadily improved in general health, at the end of two weeks she began to sit up, and, in a few days more, moved about her room at pleasure. After contraction and healing had advanced to some extent, she found that she had good control over her anus, and this we expected, because the sphincter-ani muscle was not injured or involved. During the operation the mucous membrane and sub-mucous tissues were simply dissected off, leaving the muscle intact.

Six months have now elapsed since the operation, and the results have been most gratifying. She has gained in appetite, color, flesh, and strength, and is entirely free from pain. The

* "Treatise on Diseases of the Chest," etc., by Dr. R. H. T. Laennec, New York, Samuel Wood & Sons, 1830, p. 374.

† "The Field of Disease," by Dr. B. W. Richardson, H. C. Lea's Son & Co., Philadelphia, 1834, p. 558.

‡ Read before the Cumberland County Medical Society.

movements of her bowels are almost painless, but at such times she generally notices a few drops of blood. To the touch the rectum seems perfectly healthy. There appears to be a point of slight abrasion at the ano-rectal junction which looks as if it might be the place from which the few drops of blood oozed.

REMARKS.—The cause of epithelioma of the ano-rectal region is as yet unknown. It is now generally admitted that the disease is of local origin, but just what initiates the changes in cell structure has ever remained past finding out. In regard to the development of epithelioma in other cutaneo-mucous surfaces, as the lips, it is believed that local injuries act as a powerful factor. Thus, it is admitted that a blow, or a fissure, or pressure, may cause epithelioma of the lips and mouth. Reasoning from analogy, it is not improbable that the irritation of fecal material, or hæmorrhoids, or an anal fissure, may excite an abnormal increase and extension of the epithelial cells of the ano-rectal surfaces.

The microscope has plainly revealed that the initial point of the disease is in the vague line between cutaneous and mucous surfaces. Accordingly, the elder Gross says that "epithelioma consists essentially of an ingrowth of epithelial cells into the deeper tissue," while Van Buren adds his authority by saying that, "when epithelioma begins within the rectum, it takes its origin in the follicles of the mucous membrane, and consists of cylindrical epithelial cells." Formerly it was held that epithelioma was caused by some hidden hereditary tendency, but the analysis of many cases has shown that it is as liable to occur in those who are free from such inheritance as it is in those who have a family predisposition. Modern pathologists adopt the theory of local origin, and base their reasons on the facts that the disease can be seen to start at a certain point, and that, when early and radically removed, the eradication is often complete and permanent.

Epithelioma of the ano-rectal surfaces may occur at any period of life, but is thought to be most common after middle life. I have seen three cases of malignant disease of the anus and rectum, and in each instance the patient was under thirty-five. Two of these were females; both were attacked when in good average health, and neither of them had an hereditary tendency toward cancerous disease. "My opinion is," says Professor Gross, "that epithelioma in both these localities is much more common in young persons than is generally supposed. It is not known what influence, if any, sex exerts upon the production of primary carcinoma here; the prevalent belief is that it is most frequent in the female, but this is opposed to my experience, which has supplied me with a much larger number of cases in the male."

The presence of epithelioma of the ano-rectal region is manifested by subjective symptoms and physical signs.

The subjective symptoms during the early stages bear a close resemblance to those of hæmorrhoids. "In the epithelial form it is at first supposed to be hæmorrhoids" (Agnew). "When it does come down to the anus it is generally mistaken for piles" (Allingham). "At the first interview, a patient with cancer will almost always represent himself as suffering from piles" (Van Buren). The patient suffering thus will almost invariably complain of pain. At first it may be only slight and attributed to the irritation of

the anus by the passage of fecal material. Further on it becomes more constant, being stinging or lancinating. In all cases pain is markedly increased during defecation. Cases still more advanced are characterized by pains which extend into the sacrum, perinæum, buttocks, and thighs. Constipation is another symptom almost invariably present. It was the first symptom to attract attention in the case reported above, and in this instance it was so obstinate as to require a daily use of purgatives. In many cases the constipation is due to obstruction, but in this instance the rectum proved to be even over-roomy. Van Buren refers to such conditions, and says that there seems to be defective contractile effort in the muscular walls of the intestine above the seat of the disease. I will place bleeding among the subjective symptoms, because it is one more often described to the physician than observed by him. Loss of blood is usually complained of as an early and quite constant symptom. The quantity may be slight, occurring only when the patient is at stool, or it may be more profuse, oozing either constantly or at intervals. After ulceration has taken place, mucus, or muco-pus, or ichorous fluids, may be mixed with the flow of blood, thereby changing its appearance from the bright arterial blood of hæmorrhoids.

Thus the complaint of a patient that he or she is suffering from "piles"; pain in the ano-rectal region, gradually growing worse from a slight irritation and uneasiness to constant, sharp, burning, lancinating pains; persistent, obstinate constipation, with, perhaps, tenesmus; the history of loss of blood at stools or at intervals between stools, or the loss of material having the appearance of a mixture of mucus, pus, and blood—all of these complete an ensemble of subjective symptoms well calculated to suggest the presence of epithelioma of the anus or lower portion of the rectum.

The physical signs of epithelioma are generally well marked, but vary in different cases. During the incipient stage there may be nothing more upon the mucous membrane than here and there papillary eminences and circumscribed areas which appear thickened and roughened.

Further on, these eminences become higher, vascular, coalesced, and the thickened portion partakes more of induration. Later still, the tissues of the rectum are more thickened and the surface of the growth shows a tendency to become nodular, spongy, fungoid, or cauliflower-like. It has been said that, in the early stages, the finger will detect patches or growths presenting a granular, tuberos, or nodular feeling, with more or less solidity or hardness; or, if polypoid or fungating, their surfaces may be lobulated or warty, cauliflower-like, and friable, so that fragments may be readily detached (Van Buren).

We are warned, besides, to be careful and differentiate between epithelioma and irritable ulcers, benign strictures, syphilitic ulcerations, and hæmorrhoids, but the special points in diagnosis I will not take time to discuss. After the disease is well advanced, the deeper tissues being infiltrated and indurated, and the mucous surface covered with a fungoid growth having a tendency to ulcerate, bleed, and cause a burning pain most of the time, all symptoms and signs are obvious and practically unmistakable.

The results of the early and radical surgical method, as adopted in this case, for treating epithelioma of the anorectal region, has much to commend it to the profession.

1. In the first place, if the operation is performed during the early stage of the disease, the patient is not subjected to very great risk, either from loss of blood, shock, septicæmia, or peritonitis. Therefore, conditions of great danger, which are esteemed justifiable objections to surgery of the rectum by many surgeons, are largely obviated. Heretofore, in many instances, malignant disease of the rectum has been allowed to advance until the deeper tissues became invaded and the constitution involved, and, under such conditions, operative procedures were attended with great difficulty as well as frightful risks of the nature before mentioned.

2. The operation, as performed in this instance, has the very great advantage of preserving the sphincter-ani muscle intact. After the paralysis of the muscles, incident to thorough dilatation of the rectum, has passed away and the parts have healed and contracted, the patient has good control over the anal orifice, and experiences but little trouble when defecating. In some instances, where the disease is well established, it is necessary to sacrifice a portion or all of the sphincter muscle, but, if it be possible to save some or all of it, the benefit to the patient is unspeakable.

TWO CASES OF TUMOR OF THE RECTUM.*

By CHARLES B. KELSEY, M.D.

CASE I.—RECTAL POLYPI.—The patient in this case was a physician, aged about thirty-five years, who for fifteen years had suffered severely from what he supposed to be hæmorrhoids. At each act of defecation there was a good deal of bleeding, and a mass protruded from the anus which could only be replaced with the greatest suffering. So severe was this pain that the movement of the bowels was always dreaded and postponed as long as possible.

Examination.—Immediately after straining at stool two distinct tumors were seen to be extruded and firmly held by the grasp of the sphincter. One was of the size of a hen's egg, the other of about half that size; both were hard and fibrous to the feel; neither showed any trace of mucous membrane on its surface, but, on the contrary, both were grayish and eroded, without the appearance of superficial vascularity. They were described by the patient as bleeding freely at times in small jets when thus prolapsed. Each tumor was attached by a firm, strong pedicle well inside the sphincter, one posteriorly and one on the side, the pedicle of the larger growth being of about the size of the little finger. Combined with these there were hæmorrhoids and fissures, and all the parts were so sensitive that a satisfactory examination could hardly be made.

Under ether both tumors were removed by ligaturing and cutting the pedicles. A third smaller one, of the size of an almond, was also discovered above the sphincter and removed. A microscopic examination showed them to be fibro-sarcomata—in other words, the ordinary fibrous polypi of the rectum; and the chief interest in the case is their

unusual size and number. The patient made a satisfactory recovery.

CASE II.—CANCER OF THE RECTUM; OPERATION; DEATH.—

The patient was seen by me in consultation with Dr. John Cooper, of Brooklyn. He was a man fifty-five years of age, slightly built, somewhat emaciated, and feeble from the effects of his disease, having lost about twenty-five pounds in weight within a year. His symptoms dated back eighteen months, and were the usual ones pointing to cancer or severe ulceration of the rectum—pain, and frequent bloody and mucous passages.

An examination showed a soft cancerous mass of about the size of a large hen's egg projecting into the rectum from the anterior wall, and attached opposite the base of the bladder above the prostate. The growth was lobulated and somewhat pedunculated, hanging free in the rectum, which it nearly filled at that point. The pedicle was not very distinctly marked, but was sufficiently so to give hope of easy removal. A careful examination was made of the left iliac fossa through the abdominal wall, and nothing else was found. The case seemed a particularly favorable one for partial excision, and that operation was consequently performed.

The rectum and anus were first divided with Paquelin's cautery in the median line posteriorly to allow of access to the tumor and of free drainage after its removal. The growth was thus well exposed, but found to be so soft and friable that it was difficult to get a sufficiently firm hold upon it to exert any traction. The wire of an écraseur was therefore passed over it and it was cut off *in situ*. When the instrument came away, bringing the tumor with it, it seemed to me that the end of my index-finger entered the peritoneal cavity at the *cul-de-sac*, but the sensation was so deceptive that I could not be certain, and a subsequent careful examination failed to find any such opening. After the removal of the first tumor a second small mass could be felt above, and this was scraped out as thoroughly as possible, but not entirely removed. There was no bleeding during the operation, and no dressing of the wound was considered necessary. The after-treatment of the case devolved upon Dr. Cooper, and the history is thus given by him:

The patient came out of the ether well, but, about five hours after the operation, there began to be signs of hæmorrhage, and the rectum was tamponed with cotton soaked in Monsel's solution. This failing, injections of very hot water were resorted to, and, after they had been effectual, the rectum was filled with dry cotton. Seventeen hours later this was removed and the rectum injected with carbolized water. Thirty-six hours after the operation the patient began to show signs of failing, and death occurred in fifty-three hours.

At the autopsy, made by Dr. Cooper and Dr. Ray, considerable blood was found in the cavity of the peritonæum; there was a perforation of the rectum at the site of the operation, and there was considerable cancerous deposit along the bowel for six inches above the portion which was found and removed.

The death in this case was due to shock, and the wound of the peritonæum probably contributed to the fatal result by adding to the severity of the operation. A careful examination of the growth after removal failed to show any trace of peritonæum on its surface, and the serous membrane was probably involved in the cancerous disease at the point of injury. Although every arrangement had been made for sewing up the peritonæum in case it should be opened, particular care was taken to avoid wounding it; yet it was wounded, and the small wound escaped detection—as it may easily do. Had it been found and closed, I

* Being, with additions, the reports of two cases related at the meeting of the New York Clinical Society, held February 22, 1884.

doubt if the result would have been any different. It is a complication which must always be looked for in the removal of disease as high up the bowel as this was, and a number of cases go to prove that a small opening in the dependent part of the sac may safely be left to nature to close. The case seemed one of the most favorable ones for operation I have ever seen, and yet the operation ended unfortunately, and the amount of disease undiscovered higher up the bowel would have effectually prevented any good result.

A NEW METHOD FOR THE REMOVAL OF LARYNGEAL GROWTHS, WITH AN ILLUSTRATIVE CASE.*

By WILLIAM CHAPMAN JARVIS, M. D.,

LECTURER ON LARYNGOLOGY AND DISEASES OF THE THROAT IN THE MEDICAL
DEPARTMENT OF THE UNIVERSITY OF THE CITY OF NEW YORK.

It may appear presumptuous, at this late day, for any one to offer a novelty in a department of laryngology so extensively developed and upon a theme so well worn as that pertaining to laryngeal neoplasms, and this, too, before a body of experts skilled in the knowledge and practice of the various methods employed for their removal. Any hesitancy, however, on this score has been dismissed through personal conviction, based upon accumulated evidence, indicating the utility and in some respects the novelty of my method, re-enforced by a special request to introduce the subject for your consideration and criticism.

My remarks will be confined to the employment of chromic acid for the removal of laryngeal papillomata. The success which has attended the use of this escharotic in my hands has encouraged me to relate my experience and invite a fair trial in accordance with the rules laid down in this paper.

Of the several principles employed for utilizing the destructive activity of caustics, that of direct fusion has been adopted.

The truism that the result obtained from a given drug often depends upon the exact manner of its employment especially applies to chromic acid in this connection. Its crystals are fused upon the point of a probe, in contradistinction to grooves, cups, etc. Its usefulness depends upon the affinity of the salt for moist papillomatous tissues. These tissues are effectively attacked and removed by this escharotic with unvarying constancy. The crimson chromic-acid crystals, so called, are, more properly speaking, a trioxide of chromium, CrO_3 , its combination with water forming the acid CrO_3OH ,† which is immediately reduced in the presence of organic matter, the resultant salt being the sesquioxide of chromium, Cr_2O_3 .

Chromium trioxide is highly deliquescent, immediately dissolving when applied to moist papillomatous tissues in small quantities. I shall, in deference to general usage, designate the salt chromic acid. The organic matter is apparently dissolved by the oxidizing action of the acid, but,

when applied to a limited area, its action ceases with the conversion of the salt into the chromium sesquioxide, which, as regards organic matter, is an insoluble and inert salt. This self-limiting action is a characteristic possessed by few of the other escharotics, and renders its application as a caustic safe, painless, and yet efficient.

Although chromic acid applied in small quantities at short intervals is capable of exerting a marked progressive destructive effect upon papillomata, its action upon the normal laryngeal mucous membrane is feeble and of brief duration. Its restricted activity in this respect constitutes an additional recommendation as indicating the perfect safety with which it can be carried into the cavity of the larynx.

A pronounced opinion against the use of chromic acid exists in the minds of some laryngologists. This feeling is well expressed by Dr. Morell Mackenzie, in his celebrated work on "Laryngeal Growths," in the following sentence: "Since 1862 mechanical methods have almost entirely superseded the local application of caustics."* In a subsequent paragraph he includes chromic acid in the list.

That such a prejudice should exist does not seem surprising when we consider the manner of its employment by certain operators. Every other consideration seems to have been sacrificed to obtain the speedy action of this and similar escharotics. As a consequence, most of the instruments devised for the laryngoscopic manipulation of chromic acid are arranged to contain the salt in large quantities, as, for instance, Tobold's, Türk's, and Mandl's applicators, Navratil's platinum cup, Fauvel's pinnette, etc.

Hence we find some authorities pronounce unsparingly against the use of the salt applied in substance to papillomatous tissues; others advise it, but warn the operator of the constant suffering following its application to the larynx; and, again, others recommend escharotics only after a preliminary tracheotomy.† In opposition to these views, Lewin goes so far as to always recommend the trial of cauterization for the removal of *small laryngeal growths* before resorting to cutting instruments, claiming that even in the event of failure no harm results, and that the throat by this practice better tolerates the employment of other instruments. Special writers, however, seem more inclined to limit the employment of the salt to the secondary purpose of preventing the reformation of laryngeal growths.‡ It is therefore evident that the salt, when used alone, subserves a double purpose—namely, *it enucleates the growths and prevents their recurrence*.

The recognition of the fact that benign papillomata, in their regrowth, sometimes assume the character of a veritable epithelioma,* enhances the value of chromic acid as an anti-repulsive agent. Although chromic acid and nitrate of silver, developed among laryngoscopic methods side by side, have been indiscriminately employed to obtain identi-

* See, also, Morell Mackenzie, "Diseases of Throat and Nose," vol. i, p. 320, 1880.

† G. Buck, M. D., "Transactions of the American Medical Association," vol. i, 1883.

‡ Dr. V. Bruns, "Polypen des Kehlkopfes," p. 7, etc.

* C. Wagner, "Intra-laryngeal Growths," "Medical News," February 3, 1883.

* Read before the American Laryngological Association, May 13, 1884.

† Fownes, Witthaus, et al.

cal results, their action as escharotics has been shown to be dissimilar. A peculiar irritating action exerted by the silver, resulting sometimes in an actual increase of tissue,* is not possessed by the chromium salt. Furthermore, nitrate of silver has a tendency to spread when applied to mucous membranes.† The most important difference, however, between chromic acid and nitrate of silver is the deliquescent character of the former, compared with the more tardy solubility of the latter, in the presence of moisture.

The introduction and employment of chromic acid for the removal of abnormal tissue formations is by no means recent. The late Dr. J. Marion Sims, who was present on an occasion when my method was employed, remarked that he had used chromic acid as a caustic in the early part of his professional career.

As has been already hinted, my plan is to *apply chromic acid in small quantities at short intervals*. This is best accomplished by means of a probe upon the point of which a tiny crystal of the salt has been fused. The probe should have a correct laryngeal curve. Its point, previously heated, is applied to a particle of the chromium crystals about as large as a millet-seed, or, speaking more precisely, a quantity varying in the neighborhood of one sixth of a grain. The crystals fuse and adhere to the heated metal, giving off chromium fumes. This fuming, which might result in the reduction or evaporation of the melted crystal, should be quickly interrupted by placing the probe near the palm of the hand and vigorously blowing upon it. The firmly adherent red bead is distinctly visible upon the dark surface of the chilled probe, and can only be displaced by vigorous friction.

As soon as the patient has properly withdrawn the tongue, the laryngoscopic mirror is placed in position and steadied against the side of the mouth. The probe, grasped in the operator's right hand, is pressed against the opposite side of the mouth, and, with this point as a fulcrum, is steadily advanced over the tongue until its point appears pictured in the laryngoscopic mirror. The angle of the laryngoscope is gradually altered as the applicator advances, in order to keep the probe's point constantly toward the center of the mirror. When the red dot on the probe's point is observed to be almost in contact with the growth, it is suddenly projected upon it by gently depressing the handle of the applicator. The chromium crystal vanishes from the end of the probe, reappearing as a minute white speck upon the point of application. This eschar soon assumes a yellow hue, growing darker as it gradually exfoliates. The sphacelated fragments are expectorated, leaving minute depressions upon the surface of the growth. In this way the papillomatous tissue is removed piecemeal. The irregular projections resulting from this chiseling process are leveled by successive applications of the acid, and all the parts can be carved with the caustic, according to the operator's fancy. The curve of the probe has much to do with its proper manipulation, since its successful introduction into the larynx depends more upon precision than dexterity. As the caus-

tic is guided to its goal by directing the end of the probe, the wire should be curved to keep this objective point constantly in view. A circumferential curve accomplishes this most efficiently, the point of impingement being the intersection of the radius with the arc of a circle at the base of the quadrant. Thus the instrument is readily directed by a simple curvilinear motion. A curvilinear bend, however, is not adapted to every laryngo-oral axis; in these exceptional cases the ordinary elbow-angle must be adopted.

The use of the uncovered probe is sometimes attended with more or less difficulty. This difficulty is principally due to the unintentional deposit of the application upon the base of the tongue and the neighboring structures, or to involuntary closure of the glottis. Both of these obstacles have been overcome by the little instrument shown in Fig. 1. It accomplishes the first indication by protecting the chromium crystal until it reaches the point of application, and the second by surprising the larynx.

The instrument consists of a cannula containing a movable metallic rod, the latter being continued in the form of a spiral spring at the curved portion of the tube. A probe-pointed piece of wire is riveted to the extremity of this spiral to preclude the possibility of the accidental displacement and lodgment of the caustic-carrier in the larynx. The spring also serves as a buffer to deaden the force of the probe's impact against the growth.

The handle of the applicator is excavated to receive a spiral spring, acting upon the movable rod. A detent, *d*, drops between the teeth, *t*, and sets the spring. The nut, *n*, serves to regulate the tension of the spring. When not in use, the stylet, *s*, projects beyond the hood, thus permitting fusion of the chromium crystals upon it as with the ordinary probe.

When ready for use, the probe's point is drawn within the tube by traction upon the milled nut, its return being prevented by the catch. The applicator can now be introduced without risking the loss of the application upon accidental points of contact.

It is not necessary to carry the end of the instrument directly upon the growth, since the probe-point is propelled some distance beyond the end of the tube, thus bridging over the interval of alarm.

A special feature of the instrument is the trigger device. This contributes the utmost steadiness, and, therefore, precision in manipulation, by securing instantaneous action with the smallest expenditure of force. The extremity of

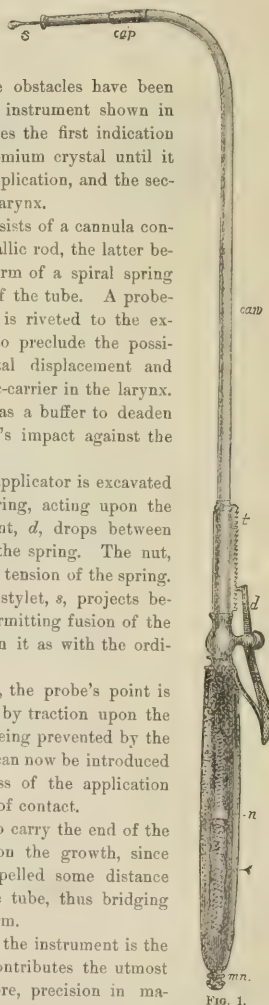


FIG. 1.

* F. H. Bosworth, M. D., "Archives of Laryngology," vol. ii, p. 116.

† Türck, "Klinik der Krankheiten des Kehlkopfes," p. 564.

the probe is made of flexible metal, to permit its fixation at any angle. Mr. W. F. Ford, of Caswell, Hazard & Co., is the original manufacturer of this instrument.

The general utility of this method for the treatment of laryngeal growths is apparent when we reflect that more than fifty per cent. of their number are papillomatous in character.

I have entered somewhat minutely into the details of my operation, more to prevent failure due to their neglect than from any personal inclination.

Illustrative Case.—In January, 1882, I met Miss F., thirty years of age, of Norwalk, Conn., in consultation with Dr. R. G. Nolan and Dr. E. R. Reilly.

The patient first noticed her voice to be affected in October, 1881. The hoarseness and difficulty in breathing slowly increased, and, at the time of our examination, she spoke in a strained and scarcely intelligible whisper. We

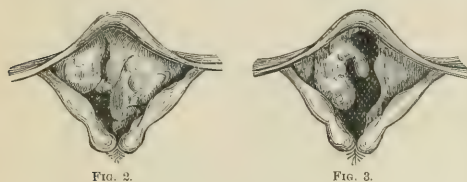


FIG. 2.

FIG. 3.

discovered by laryngoscopy that the lumen of the larynx was almost entirely occluded. The laryngeal ventricles were obliterated, and the mass, as was afterward shown, projected far within the cavity of the larynx. It presented the usual appearance of a papilloma.

Fig. 2, copied from a sketch, gives an idea of its size and shape. The dark triangular outline near the right arytenoid prominence marks the only available breathing space. A tentative test, made with a probe, provoked a most intense inspiratory spasm, the intervals being prolonged almost to the point of suffocation.

Subsequent experiments resulted in similar manifestations. The patient would not listen to a proposition involving tracheotomy.

While in this dilemma, the idea occurred to me of utilizing chromic acid as an escharotic, applied frequently and in small quantities. The acid was therefore made use of in the manner explained.

I was at once reassured by the good behavior of the larynx. The gentle touch of the probe, laden with the chromium salt, produced neither cough nor spasm.

Applications were made daily, sometimes two or three at each sitting. The respiratory chink gradually widened under the eroding action of the escharotic, and on February 14th the discordant whisper was replaced by a loud, raucous voice. This effect was really accomplished in five days, there being an interruption of nine days, for which the patient was not responsible.

Fig. 3 represents the appearance of the growth on February 22d, shortly after the return of the patient's voice.

Fig. 4, copied from a sketch taken just after the completion of the treatment, March 3, 1882, exhibits the irregularly cicatrized ventricular bands, and the shape and size of the

supra-glottic aperture. At this time the patient claimed she spoke and sang as well as ever.

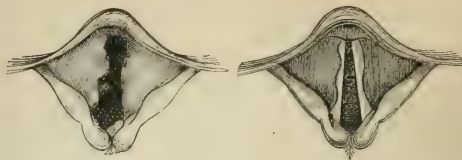


FIG. 4.

FIG. 5.

Fig. 5 was photographed from a sketch taken March 4, 1884, two years after the completion of the treatment. It shows the relation of the true cords and ventricular bands, and the slight changes of a beneficial character which occurred in that time.

I do not wish to be understood as confining myself to this measure for the removal of all laryngeal papillomata, although it was the only one employed in the case described. On the contrary, I have not hesitated to employ it in conjunction with the forceps or snare. I believe that a majority of those present will agree that, in view of the facts just given, the opprobrium attached to this beneficent measure is unjust, and largely due to misapprehension or misuse.

No observations can be said to have acquired the honor of established facts until they have been verified by long-conducted and repeated experimentation. I have endeavored to constantly keep this in view while formulating these results, being well aware that bare assertion based upon insufficient data is scientifically valueless.

Conclusions.—In recapitulating, I submit the following propositions:

1. Trioxide of chromium, or so-called chromic acid, is valuable as an escharotic on account of its self-limiting action.
2. It affords a safe and reliable means for the removal of large and small soft laryngeal growths.
3. It not only removes the growth, but also prevents its recurrence.
4. It is best applied fused upon a probe.
5. Its application is facilitated by an instrument devised to act as a guide, protector, and regulator.
6. Its use in the larynx is not necessarily attended with pain or spasm.
7. It offers a substitute for tracheotomy and thyrotomy in certain cases where these measures have been adjudged necessary.

25 EAST THIRTY-FIRST STREET.

DISCUSSION.

Dr. COHEN.—It is so long since I have employed the agents mentioned in the treatment of these affections of the larynx that I have almost forgotten the fact. Everything depends upon the manner of making the application, and Dr. Jarvis's paper will give us confidence in trying the method again. The results of old methods certainly are not very encouraging. In a case like the one described I think the forceps should be applied and as much as possible of the growth removed, after which the caustic should be applied. But even then I should

not expect to get such quick results as Dr. Jarvis has obtained with the caustic alone.

Dr. ROE.—I have used the caustic, but have not attempted to remove the whole of the growth by that means alone, as Dr. Jarvis has done. An interesting case of papilloma of large size came under my observation about a year ago. The patient had been aphonic about eight years, and her physician had treated her for chronic hoarseness. I found a papilloma occupying the anterior two thirds of the right vocal cord. This I removed in part with the forceps, and afterward she could speak fairly well. At the next sitting I removed the whole growth except the base, to which I applied the chromic acid.

Dr. ROE and Dr. SEILER described an instrument similar to the one mentioned by Dr. Jarvis, which they had used in the removal of these growths.

Dr. INGALS also described an instrument which he had employed for making applications to the larynx. He had used chromic acid in cases of cancerous disease without any bad result.

Dr. G. W. MAJOR, of Montreal.—I think the principle of treatment of growths by means of chemicals depends upon their affinity for water. It is necessary to use them in small quantities and with much care, as they are difficult to handle. Indeed, in children it is almost impossible to employ them at all. For a year I have been in the habit, in the case of children, of making applications of absolute alcohol to the growth by means of the spray, and the results have been very successful, resulting irritation being but slight, while the tumor has been caused to shrivel.

Dr. JARVIS, in closing the discussion, said: Instrumental interference in my case was out of the question because of the danger of spasm of the glottis. The seriousness of this accident is likely to be in proportion to the size of the laryngeal growth, and to depend somewhat upon its location. If it extends some distance into the larynx, the removal of the upper portion of the growth would simply produce intense spasm and possibly suffocation. If the location and size of the growth were such as to make the occurrence of spasm improbable, I would not hesitate to adopt the method suggested by Dr. Cohen.

CASES OF RESTORATION OF THE EYELID BY TRANSPLANTATION OF A FLAP WITHOUT A PEDICLE.*

By CHARLES STEDMAN BULL, M. D.,
NEW YORK.

CASE I.—The patient was a man, aged thirty-two, with complete ectropion of the right upper lid, and entire destruction of the right lower lid and eyeball from a burn. The accident had occurred fourteen months before, hot molten metal having been dashed in his face from a ladle. The whole forehead, temple, and cheek were a mass of cicatricial tissue, the lines of contraction running in almost every direction; and this rendered impossible any attempt at restoring the eyelids by sliding or twisted flaps. Wolfe's method of transplantation without pedicle was deemed the only one applicable to the case, or that gave any promise of success, and the patient consented to the trial being made.

The ciliary margin of the upper lid was loosened from its cicatricial attachment to the eyebrow and brought down into its normal place, and was then stitched to the edge of the skin which corresponded to the position of the ciliary margin of the lower lid, and which was adherent to the inferior orbital mar-

gin. A piece of skin, one third larger than the space to be filled, was then marked out on the inner side of the left forearm, and carefully dissected up, leaving, however, an attachment by a narrow pedicle. The space to be filled was then prepared by cleaning the surface and stanching the slight flow of blood. The pedicle of the flap was then divided, and the lower surface of the flap carefully cleaned of all fat and connective tissue. It was then placed in position, and one end, that seemed very redundant, was trimmed off. The transplanted flap then measured an inch and three quarters in length by an inch and a quarter in breadth. One suture was inserted at each end of the flap, and then the entire external surface was covered with a single layer of goldbeater's skin and five layers of iodoform gauze; over this a layer of borated cotton was applied, and then a roller bandage. The dressings were not removed for five days. They were then carefully taken off, and the flap was found united throughout *except at the points of suture*. There had been no suppuration. The same dressing was reapplied and changed every second day for two weeks, and then was discontinued entirely. The flap has shrunk somewhat, and the patient is able to open the eyelids to about two thirds of the normal width. It is now six months since the operation was performed.

CASE II.—This patient was also a man, aged forty-one, a fireman by occupation, who had been burned on the left side of the forehead and nose, and on the left upper eyelid, two years before I saw him. The inner two thirds of the upper lid were everted and anchored to the upper orbital margin. The forehead, nose, and cheek were so badly scarred that there was no hope of any successful result from sliding or twisted flaps. The everted lid was dissected free from the orbital margin, brought down into place, and stitched to the margin of the lower lid, the edges of both being first freshened. A piece of skin, one inch long by three quarters of an inch wide, was then dissected up from the inner side of the left forearm and carefully cleaned of all fat and connective tissue, leaving it still attached by a narrow pedicle to the arm. The space to be filled was prepared for its reception by careful cleansing and the removal of all small clots and shreds of tissue. The pedicle was then divided and the flap transferred to the vacant space to be filled. As it did not lie quite smoothly, owing to the cicatrices on the side of the nose, six fine sutures of carbolized silk were introduced at different points, in order to maintain the flap in position. This was then covered by a layer of goldbeater's skin; over this were applied four layers of iodoform gauze; over this a layer of borated cotton and a roller bandage. The dressing was not disturbed for four days, and when it was removed there were several suppurating spots at the suture-points. The wound was carefully washed with a one-per-cent. solution of carbolic acid, and the dressing then reapplied. This was changed and the surface carefully washed, as before, every day for ten days. By this time all suppuration had ceased, the flap had united throughout, and there was no slough.

CASE III.—The patient was a man, aged twenty-three, with complete eversion of the right lower lid from caries and long-continued suppuration of the inferior orbital margin and malar bone. The patient was a marked example of scrofula, and bore the traces of glandular suppuration on both sides of the neck and beneath the angles of the jaw in deep scars. There had been since boyhood a carious process in the malar bone on the right side, with a fistulous opening leading down to the diseased bone, and from time to time small pieces of bone had come away. No operation had ever been done for the removal of the dead bone and the cure of the disease. Gradually the lower lid had become everted until the entire lid margin appeared bound down to the margin of the orbit, or rather to the

* Read before the American Ophthalmological Society, July 16, 1884.

malar bone, and the eversion was complete. The fistulous opening had closed about a year before I saw the patient, and had remained so ever since. There was constant epiphora, and occasionally a slight muco-purulent discharge. The palpebral conjunctiva was very much thickened, and presented a surface like that in chronic granulations or trachoma. The site of the old fistulous opening was a little to the nasal side of the malar prominence, but the bone disease had been so long-continued that the periosteum had become involved for some distance on all sides, and nearly the entire lid was bound down firmly to the underlying bone, in which there was a perceptible depression caused by loss of substance. The skin covering the cheek and temple was scanty in quantity and but very slightly elastic, so that it was not deemed advisable to attempt filling in the space by a sliding flap from the cheek or a twisted flap from the temple; but it was thought that the best results might be gained by filling the vacant space with a flap of skin taken from a distance by Wolfe's method, although it is well known that this method of operating does not succeed so well in cases of restoration of the lower lid as where the upper lid is to be restored, mainly owing to a lack of sufficient base-support for the transplanted flap.

The depressed cicatrix was first separated from its subcutaneous adhesions to the bone with a tenotomy-knife, introduced through healthy tissue beyond the margin of the cicatrix. This required some little time and careful manipulation, owing to the extent of the adhesions. It was then found that, though the tissues were more movable, the depression and eversion of the lid were as marked as ever. The next step was the excision of all the cicatricial tissue, the first incision being made parallel and very close to the ciliary margin of the lid, throughout its entire length. The lid was thus made freely movable, and was replaced in position. The cicatricial tissue was then carefully excised, and this left a space an inch and a quarter long by half an inch wide, to be filled by a transplanted flap. This was marked out on the thin skin covering the anterior wall of the thorax on the right side, the measurements being a quarter of an inch larger in all directions than the space to be filled. This flap was then dissected up free from all adipose and connective tissue, and carefully fitted to the space in the lower lid, which had been previously prepared for it. A little trimming of the edges was found necessary before complete coaptation succeeded. As this was the lower lid, with not a very firm base of support, it was thought best to introduce a few sutures to maintain the parts in coaptation, and five stitches of fine carbolized silk were introduced at regular intervals and tied. The flap and surrounding skin were then gently and carefully cleansed with a saturated solution of boric acid, and the entire surface was then covered, as in the other cases, with a layer of goldbeater's skin, which extended for the distance of an inch on all sides beyond the line of the flap. Over this were applied four layers of iodoform gauze; over this a layer of borated cotton, and then a rather firm roller bandage.

The patient was quite prostrated from the effects of the ether, as the operation took about forty-five minutes, but rallied in a few hours and sank into a quiet sleep. The next morning he was very comfortable, and complained of no pain. The dressings were not removed till the afternoon of the third day, when the patient complained of a sense of hardness and discomfort in the eyelid. When the flap was exposed it was found that there was suppuration at all the suture-points, and the surface of the transplanted skin had a brownish discoloration, as if about to slough. The parts were thoroughly cleansed with a two-per-cent. solution of carbolic acid, and freely dusted with iodoform. The goldbeater's skin, iodoform gauze, and borated cotton were then reapplied, and over all a rather loose

roller bandage. This was allowed to remain for two days, and when it was removed it was found that there was a complete slough of the epidermal layer of the flap, but that the necrotic process had not extended any deeper. Suppuration still continued at three of the suture-points, and a small amount of pus exuded on pressure, but the flap was quite firmly adherent. The parts were again cleansed with a two-per-cent. solution of carbolic acid and covered with powdered iodoform, goldbeater's skin, and iodoform gauze, but without the layer of borated cotton, and a loose bandage was applied over all. This dressing was changed and reapplied every day, the parts being carefully cleansed as before.

From this time suppuration ceased, and the healing process went on steadily to completion. The sutures were all removed on the sixth day. It is now nearly three months since the operation, and, though the process of shrinkage in the flap has not yet ceased, the result of the operation is very satisfactory.

Book Notices.

Brain Exhaustion, with some Preliminary Considerations on Cerebral Dynamics. By J. LEONARD CORNING, M. D., formerly Resident Assistant Physician to the Hudson River State Hospital for the Insane, etc. New York: D. Appleton & Co., 1884. Pp. 234.

THE author has chosen an affection of which many examples are to be found if we can accept as true the statements made by late writers on the subject of diseases of the nervous system. Certain it is that every practitioner is called upon to prescribe for patients giving such symptoms as Dr. Corning describes in this little book. The author gives some preliminary considerations on cerebral dynamics, a confessedly dry subject, but made as interesting by the author as the study of the osseous system by the medical student. Much credit is given the late Dr. G. M. Beard for his researches in the same line. The author shows familiarity with the literature of the subject, and has evidently given much attention to what he calls "the dynamic forces and the brain." The chapters devoted to the clinical and pathological consideration of the subject are concise and yet complete. The clinical history is illustrated with the histories of cases. This adds much to the interest and serves to confirm the author's views, and to elucidate what might otherwise be obscure points.

The author inclines to the opinion that diseases of the nervous system are on the increase, and tries to find a cause for this in the accompaniments of civilization and in climatic influences. Rum and tobacco in excess, to state it in the language of the temperance people, play their part. The telegraphic system, railways, steam, the necessary work on the great newspapers, are illustrations of the accompaniments of civilization which predispose to brain exhaustion. Our own country, with its dry and stimulating climate, predisposes to it. False educational conceptions and methods favor it.

Not only do these act as predisposing causes of brain exhaustion, but, in the opinion of the author, they may have some agency in affecting the mental integrity of posterity.

The chapter devoted to mental hygiene is a good one.

The matter of treatment is an important one. The author gives attention to diet, rest, and medication. Electricity is given an important place in the treatment, and the author gives full directions as to its uses and application. He has devised an instrument for compressing both the carotid arteries at the

same time, and he thinks he has seen much benefit from the combined use of this compression and galvanization of the cervical sympathetics.

The book is written in a pleasant style, contains much valuable matter, and would be a decided addition to any physician's library. The get-up of the book is admirable.

A Text-Book of Pathological Anatomy and Pathogenesis. By ERNST ZIEGLER, Professor of Pathological Anatomy in the University of Tübingen. Translated and edited for English students by DONALD MACALISTER, M. A., M. B., M. R. C. P., Fellow and Medical Lecturer of St. John's College, Cambridge. Part II.—Special Pathological Anatomy: Sections I–VIII. London: Macmillan & Co., 1884. Pp. xv–371. [Price, \$3.50.]

THE eagerness with which a new work on pathology is seized upon by German students is seen in the fact that three editions of the first part of this work (in the German language) were called for before the second part was ready for the printer. The same ground is covered, of course, which has been covered repeatedly in previous German works on pathology, but this book is in advance of all others in its treatment of the germ theory and its application to special pathology. Lucid and fascinating as the work of the translator is, and commendable in the highest degree, it presupposes also clearness and conciseness of thought and expression on the part of the original work, qualities which are anything but common among German writers. The subjects which are treated of in this volume are the blood and lymph, the vascular mechanism, the spleen and the lymphatic glands, the serous membranes, the skin, the mucous membranes, the alimentary tract, and the liver and pancreas. In the chapter on the serous membranes we notice a radical change, in the adoption by the author of the doctrine of Hertwig and Balfour, that the primitive body-cavity has no original communication with the vascular system, in opposition to the theory of Haeckel, that the pleuro-peritoneal cavity is only a lymph-space. We would also note, as especially satisfactory, the section upon the skin. When this work is finished there will no longer be just cause for the complaint that there is no satisfactory treatment of the subject of pathology in the English language.

Regional Surgery, including Surgical Diagnosis. A Manual for the Use of Students. Part II, the Upper Extremity and Thorax. By F. A. SOUTHAM, M. A., M. B. Oxon., F. R. C. S. Eng., Assistant Surgeon to the Manchester Royal Infirmary, etc. London: J. & A. Churchill, 1884. Pp. xvi–223 to 582, inclusive.

THE first part of this students' manual appeared two years since, and dealt with the head and neck. This, the second, includes the upper extremity and the thorax, and the third will include the abdomen and the lower extremity. Had we chosen the title, we should have reversed it, and called it a manual on surgical diagnosis for the use of students, including some regional surgery, which more correctly represents the work than the name regional surgery. It is a dry sort of "cram-book," such as a student generally carries in his pocket and reads in out-of-the-way places the week before examination. In the place of illustrations there are tables of differential diagnosis, and the whole book is eminently calculated to make the student wish he were something else. For example, on page 136 the student is offered the following interesting reading, the numbers referring to various scattered paragraphs:

"*Tumors of orbit.*

"1. *Those originating in the orbit itself*, connected with either

"Bone, e. g., exostosis (236), enchondroma (237), sarcoma (243).

"Periosteum, e. g., nodes (usually syphilitic, 231), fibroma (238), sarcoma (243).

"Soft tissues of orbit, e. g., sebaceous cyst (207), gummata (239), sarcoma (243), carcinoma (243), hydatid cysts (240).

"Blood-vessels, e. g., aneurysm and pulsating tumors (241), nævus (242).

"Lachrymal gland, e. g., inflammatory enlargement (218), new growths (221)."

We give this simply as a fair example of the style of the book. It is surgery boiled down, surgery destitute of all attraction, and with all grace and vigor of language and description carefully eliminated; and the natural result is a book full of hard, dry, useful facts.

Hand-book of Vertebrate Dissection. By H. NEWELL MARTIN, D. Sc., M. D., M. A., Professor in the Johns Hopkins University, and WILLIAM A. MOALE, M. D. Part III. How to Dissect a Rodent. New York: Macmillan & Co., 1884. Pp. iv–168 to 247, inclusive. [Price, 60 cents.]

THIS third part of Martin and Moale's dissection hand-books describes the necessary manipulations for the dissection of the common rat, with a description of all that the student of comparative anatomy would be expected to observe in carrying out his work. There is little to be said of such a work except that it is compact, complete, and conveniently arranged, and just suited to the purpose for which it was intended—to serve as a manual for use at the dissecting-table. It is well illustrated and carefully indexed.

Transactions of the Obstetrical Society of London. Vol. XXV, for the Year 1883. With a List of Officers, Fellows, etc. London: Longmans, Green & Co., 1884. Pp. lix–315.

A GLANCE at the contents of this volume shows that the London Obstetrical Society, with true English conservatism, has not yielded to the fascination of surgical gynecology to the neglect of the legitimate field of obstetrics. There is a danger, which is already pronounced in certain quarters, that the all-important themes pertaining to obstetrics will languish from want of attention, and from interest having been diverted into another field. With all regard for the merits of Wells, Thornton, Bantock, Tait, and the rest of the British gynecologists, it is satisfactory that the obstetricians Duncan, Barnes, Braxton Hicks, and the others, have not failed in furnishing their just proportion to the Transactions of the Obstetrical Society for 1883.

BOOKS AND PAMPHLETS RECEIVED.

The Theory and Practice of Medicine. By Frederick T. Roberts, M. D., etc., Professor of Materia Medica and Therapeutics, and of Clinical Medicine, at University College, etc. With illustrations. Fifth American edition. Philadelphia: P. Blakiston, Son & Co., 1884. Pp. 1,008.

Diseases of the Throat and Nose, including the Pharynx, Larynx, Trachea, Esophagus, Nose, and Naso-pharynx. By Morell Mackenzie, M. D., London, Consulting Physician to the Hospital for Diseases of the Throat, etc. Vol. II. Diseases of the Esophagus, Nose, and Naso-pharynx, with Index of Authors and Formule for Topical Remedies. Illustrated. Philadelphia: P. Blakiston, Son & Co., 1884. Pp. viii–17 to 550, inclusive.

The National Dispensatory. Containing the Natural History, Chemistry, Pharmacy, Actions, and Uses of Medicines, including those recognized in the Pharmacopœias of the United

States, Great Britain, and Germany, with numerous references to the French Codex. By Alfred Stillé, M. D., LL. D., Professor Emeritus of the Theory and Practice of Medicine and of Clinical Medicine in the University of Pennsylvania, and John M. Maisch, Phar. D., Professor of Materia Medica and Botany in the Philadelphia College of Pharmacy. Third edition, thoroughly revised, with numerous additions. With three hundred and eleven illustrations. Philadelphia: Henry C. Lea's Son & Co., 1884. Pp. xv-1755.

Correspondence.

LETTER FROM VIENNA.

The Advantage of the Summer Course, for studying Obstetrics.—The Assistants at the Clinics, and their Work.—Billroth's Fourteenth Resection of the Pylorus.—Gastrostomy.—Antisepsis.—A Promising Clinical Teacher.

VIENNA, July 31, 1884.

THERE is a visible falling off in the attendance at the various clinics this summer in comparison with last, the reason of which is not very clear, unless it is that there exists in the minds of some of the American students a certain lurking dread of the cholera. No cases have been reported here, though there have been the usual rumors with regard to their existence. The weather during the past two or three weeks has been delightfully cool, and in every way conducive to hospital work. The few Americans who remain here find that they can employ their time most profitably, especially in the obstetric wards. The writer has already expressed the opinion that summer is the time in which to study midwifery in Vienna, and he has frequently had an opportunity to verify that statement.

The surgical clinics are conducted by the assistants during the vacation, but they are none the less interesting on that account; on the contrary, the summer visitor can witness just as many operations as in winter, and has a far better chance to observe the various steps closely. It is surprising to see how much is intrusted to the assistants, and yet not so surprising when one observes their skill and the minuteness with which they execute all the details suggested by their chief.

Perhaps the most striking feature of the Vienna school is that those who are trained in it learn one method of working, and one only—that of the professor under whom they have studied. But with this method they are thoroughly acquainted. This may be a somewhat narrow way of educating men, yet it has this important result—the Vienna assistant never hesitates in an emergency, but meets it promptly as he has been taught. He may not always do the best thing, according to our ideas, but indecision does not form one of his failings. This coolness in trying moments will be noticed especially in the surgical and obstetrical wards, where emergencies are of such common occurrence.

It would be manifestly unfair to compare an assistant with one of our average hospital internes. The former is necessarily older, brings a greater amount of maturity to the work, and is expected to assume heavier responsibilities. As he combines with his ordinary routine duties those of an instructor in the university, he must be thoroughly versed in his specialty.

His term of service is from six to ten times as long as that of our house-officers, so that he has an opportunity to become perfectly familiar with the peculiar methods of his chief, and, through constant practice, to acquire a surprising dexterity in

applying them. Instead of being compelled to pick up his experience in a desultory way from attendance on a number of different visiting surgeons, as with us, he is brought into daily contact with *one* teacher—a man of more or less individuality, who desires to stamp his opinions upon the minds of his followers. The practice of the assistant is that of his professor, which the younger man rarely ventures to modify essentially.

Each clinic is an independent school, of which the professor is the central sun, the assistant an orb of lesser magnitude. And yet, with all the German's ability, it is a question if the American interne can not sometimes, by his native ingenuity and confidence in his own resources, extricate himself from a dilemma quite as creditably as the Vienna assistant with his wider experience and strict adherence to established rules.

To characterize the essence of Vienna instruction in a few words: In spite of its dogmatism, it aims at making of the student a man of prompt decision and rapid execution—in short, a practical physician rather than a theorist.

I referred above to the surgical clinics, and this leads me to mention that Billroth performed another resection of the pylorus last week—his fourteenth operation of the kind, I believe.

The frequency with which this formidable operation has been attempted, and abandoned on account of unsuspected complications, has thrown some doubt upon the possibility of deciding beforehand which cases are suitable for resection and which are not.

Gastrostomy for carcinoma of the cesophagus and cardiac orifice is a favorite procedure in Albert's clinic, where I think it has been done upward of thirty times (twice this week), with very fair success in prolonging life. Such a palliative course as this will always commend itself to American surgeons rather than the radical treatment of Billroth.

There is little to be said with regard to Vienna antisepsis in addition to what has been previously stated. The spray is still used in intra-peritoneal operations, at least in the surgical clinics, for it has disappeared from Professor Braun's lecture-room. The solution of corrosive sublimate is extensively used, both in spray and for the irrigation of wounds. As an after-dressing, iodoform continues to be popular, and every one professes skepticism as to the danger of poisoning. Powdered benzoate of sodium is often sprinkled over the external wound in laparotomy previous to applying the dressings. By some it is preferred to iodoform.

Nothing new can be mentioned with regard to the summer courses. Popular classes conducted by assistants are that of Kiehl on the skin, Finger on syphilis, and those on operative obstetrics. Frühwald, at St. Anna's Children's Hospital, gives an interesting course. I have counted in his class representatives of nine different nations (including two Japanese). It is such a cosmopolitan gathering as this which gives one an idea of the wide influence of Vienna in the medical world.

It may not be improper to mention one who, in a quiet way, is acquiring an international reputation as a clinical teacher. I refer to Dr. Joseph Taelg, Bamberger's assistant, whose instruction in general medicine is eagerly sought after by Americans, and perhaps more highly valued than any other which they receive here. A keen diagnostician, a clear yet remarkably simple expounder of his subject, discarding all the complicated apparatus which some clinicians consider so necessary, he has the happy faculty not only of unraveling knotty cases, but of teaching his pupils to do the same. Without any apparent effort to force his students to adhere to any one method of investigation, he only asks of them accuracy and common sense.

Altogether, Dr. Taelg may be regarded as a representative of the best type of the younger Vienna men, with whom personal gain is not the sole consideration.

THE
NEW YORK MEDICAL JOURNAL,

A Weekly Review of Medicine.

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Edited by
FRANK P. POSTER, M. D.

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THE TRANSMISSION OF TUBERCULOSIS BY MILK.

An English physician, Dr. Francis Imlach, has lately made a number of experiments bearing upon the question of the transmissibility of tuberculosis by the milk of tuberculous cows, and has published an account of his observations in the "British Medical Journal." Referring to the positive results obtained in such experiments by Gerlach, Münch, and Bollinger, Dr. Imlach suggests that the idea of there having been some fallacy in their experiments is favored *a priori* by the well-known freedom of young calves from tuberculosis, which could scarcely be the case if the disease were readily transmissible by the milk, and favored further by analogy, since in the case of syphilis, a disease of far more assured infectiousness than tuberculosis, the physiological secretions are still held by the most capable observers to be powerless to convey the infection. The drift of his own experiments supports this theoretical view of the matter, but, while he thinks that they do not suggest the inference that a healthy child in a comfortable house would be hurt by the occasional ingestion of such milk, it would be rash to conclude, without further observations, that tubercle might not thus be engendered in an ill-fed and ill-clad child with an unhealthy heritage and a digestive mucous membrane eroded by frequent diarrhoea. This must certainly be regarded as a moderate way of stating a conclusion.

Three tuberculous cows furnished the milk which was employed in Dr. Imlach's experiments, and three calves, four pigs, a goat, two young monkeys, and fourteen young guinea-pigs (besides one monkey and four guinea-pigs for "control" purposes) were the subjects of the feeding experiments. One of the calves was fed from the 15th of April, when it was a week old, until the 11th of May, upon three quarts daily of the milk from one of the cows, and from the 11th of May until the time of its death, July 14th, upon three quarts daily from another of the cows. A careful post-mortem examination revealed no appearance of tubercle in the lungs, the pleuræ, the liver, the kidneys, the glands, or the other organs; but there was some congestion of the small intestine, which was supposed to be the cause of death, and there were a few small nodules, about as large as a pea, scattered over the mesentery. These, however, had not the look of tuberculous nodules as they are ordinarily seen in mature cows, and microscopical investigation failed to reveal the bacilli of tubercle in any of them. The two other calves were obtained, one on the 14th and the other on the 17th of August, each being a fortnight old and of healthy parentage. They were fed with two quarts of milk apiece from two of the cows until the end of October, when they were slaughtered and

found to be in prime condition, nothing abnormal being discovered on most careful post-mortem examination.

Two of the four pigs were fed with the milk from June 27th until August 20th, and the other two from August 21st until the end of October, when all four of them were killed and found to be absolutely free from disease. The goat, which was of unknown age, got an indefinite quantity of the milk daily from June 11th until the end of October. It was then killed, and its lungs and other organs were found entirely free from tubercle. Two young monkeys, newly landed, were obtained on the 29th of March. One of them was fed on bread soaked in the milk of all the three cows in succession. The other was fed with bread soaked in milk from a healthy cow. Early in June another young monkey was procured, and it was fed like the first. Besides the milk, all of them were given fruit. The "control" monkey died one cold night, after it had been kept five weeks. Its lungs were congested, but there was no tubercle. At the end of October the two other monkeys were killed, being in a miserable condition at the time, and the lungs of both were found riddled with tuberculous cavities, their livers studded with purulent cavities, and their mesenteric glands enlarged. From the great proneness of monkeys to fall a prey to tuberculosis when they are brought to cool climates, Dr. Imlach argues that the results in these two animals can not fairly be considered as due to infection by the milk, and this, we think, should undoubtedly be admitted. The guinea-pigs were fed on bread soaked in the milk, eight of them for a month, and six of them for a length of time which is not clearly stated. Three of them died, and the others were killed, but none of them showed signs of tuberculosis.

In view of the general alarm that has been occasioned by apparent demonstrations of the capability of milk to convey tuberculosis, the results of these observations are certainly to some extent reassuring; but it must be borne in mind that the experiments were few in number, that in such a matter as this it takes an overwhelming preponderance of negative results to raise a well-founded presumption of fallacy in a few positive instances, and that Dr. Imlach was careful to exclude lesions of the udder—an additional source of infection in the case of milk taken indiscriminately from dairy cows. Bearing these considerations in mind, we are unable to realize the safety of relaxing in any respect the precautions that our sanitary boards are beginning to take to prevent the sale of milk from diseased cows.

GYNÆCOLOGY IN THE GENERAL HOSPITALS OF LONDON.

It seems as if it would never cease to be the case that the particular aspect of a matter which, in one community, men of discernment feel impelled to urge upon the attention of their fellows, from its having been ignored, is precisely the aspect which, in a different community, men of the same sort feel it their duty to try to draw down from the false prominence into which it may have been elevated. This state of things is strikingly exemplified in the comparative status of gynæcology, in its relations to general surgery, in the great hospitals of London

and in those of this country—using the term gynecology, in its broad sense, to include both obstetrics and the medical and surgical management of the diseases and injuries peculiar to women, but not necessarily connected with childbirth. Here, what needs to be urged upon the managers of the great general hospitals is the propriety and the advantage of establishing a gynecological department, to be given into the care of one or more men of recognized attainments in the specialty, whose ambition and constant effort would be directed to perfecting its conduct. In London, on the contrary, to judge from our previous understanding of the facts together with the additional light thrown on them by the physician-accoucheur of St. Bartholomew's Hospital, Dr. Clement Godson, in his recent address before the Section of Obstetric Medicine of the British Medical Association, as we find it published in the "British Medical Journal," gynecology is too much specialized, being restrained to an absurd degree from overlapping general surgery in the matter of operations.

Speaking for his own hospital, Dr. Godson informed his hearers that in the year 1858 it was made the rule of the house that the medical officer in charge of the ward set apart for the diseases peculiar to women should not perform any surgical operation on his patients, but that all such operations should be done "by each surgeon in turn, for a period of three months at a time." It is scarcely necessary to add that the "surgeons" are not the gynecological members of the hospital staff. So rigidly was this barbarous rule enforced that in 1859 "Dr. West was severely censured 'for having taken upon himself to perform an operation of a surgical character upon a patient admitted into Martha's Ward.'" But, as if they had not gone far enough in seeking to degrade and humiliate their gynecological officers by taking their proper work out of their hands and distributing it among the surgeons, in 1870 the managers committed it to the fourth surgeon and the first assistant surgeon. Although it is but fair to presume that the fourth surgeon of St. Bartholomew's Hospital is in nothing save rank the inferior of his seniors, it is difficult to avoid the inference that the authorities of the house took no pains to spare their gynecologists the appearance, if not the reality, of a fresh indignity. But it appears that, in its essential features, this state of things is not peculiar to the hospital mentioned, but obtains in many of the older general hospitals of London. The result is that the gynecologists of those institutions either do no operative work or they do it only by the kind permission of their surgical colleagues, and really in contravention of the rules; and the anomaly is witnessed of the very man who is making for himself a world-wide reputation as an ovariectomist, by his success in a special hospital, being debarred from so much as sewing up a lacerated perineum in the general hospital where he happens to hold the gynecological appointment. When we add that these general hospitals are the institutions which also serve as the medical colleges of the British metropolis, and that their professors of gynecology find it necessary to send their students to the special hospitals for practical instruction in that branch, it is evident that the preposterous rule in question works to the

detriment of the general hospitals as educational institutions at the same time that it cripples the progress of gynecology in London. Strictly construed, the rule applies even in the case of operations that are distinctively obstetrical, so that the obstetrician would have no warrant for performing a Cesarean or a Porro operation, as Dr. Godson suggests.

We do not wonder that the gynecologists of London chafe under these galling and discouraging and utterly senseless restrictions, or that, to use Dr. Godson's vigorous expressions, they are driven to feel that the old term of *man-midwife* would fit them better than that of obstetrician.

MINOR PARAGRAPHS.

THE MEDICAL ASPECTS OF THE GREELY EXPEDITION.

STRICTLY speaking, the events connected with the expedition have little to do with medicine, except in the broad matter of the influence of privation, hardships, and mental depression on the vital powers of men subjected to them for a protracted period, and this aspect is so extensive in comparison with the facts at our command that it is not our intention to enter upon its consideration. The formalities that had to be gone through with in order to obtain permission for the body of one of the deceased men to be taken through this city, involving as they did the issuing of a certificate by the chief medical officer of the military department which, although naturally supposed by him to embody nothing but the truth, was in the most essential particular directly at variance with the facts—the inconvenience of these formalities, we should think, would be likely to raise the question in many minds whether, on the whole, it conduces to the accuracy of our records, or indeed answers any important good purpose, to insist upon their being gone through with under like circumstances.

As for the absurd talk about "cannibalism" indulged in by some of the newspapers, it can only be said that the facts, as now understood, and as supported by the post-mortem examination of at least one of the men who perished, make it probable that the flesh of some of the deceased was, more or less of it, consumed as food. But, if this happened at all, it happened under the dire stress of circumstances that can scarcely have been appreciated by the vile horde of howlers who have beset the relatives of more than one of the deceased with their clamors of exhumation, apparently from no better motive than that of the most vulgar curiosity. Moreover, it does not constitute "cannibalism," and the less this term is used in connection with the matter the better will it be for our reputation as a decent people.

A NEWSPAPER ACCOUNT OF A HYSTERECTOMY.

LAST Monday the "World" published a precious mess of bosh about an operation for cancer of the uterus, by extirpation of the organ, performed at the New York Hospital on the preceding Saturday. The name of the operator is given, coupled with the most fulsome laudation, and the details of the operation are spread out without stint. The account closes with this Bunsian forecast: "If no untoward symptoms set in, and the growth does not return, the patient will recover." Disgusting as such stuff ought to be to the "World's" readers, it can not be more so to them than to the surgeon with whose name the writer of the article makes so free. We can not suppose that non-medical persons are intentionally admitted to witness surgical operations at the hospital, and it may be asked if, even at the expense of some inconvenience to those who are really en-

titled to be present, the authorities of the institution would not be justified in enforcing a stricter scrutiny of individuals who may present themselves on such occasions.

NEWS ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending August 19, 1884:

DISEASES.	Week ending Aug. 12.		Week ending Aug. 19.	
	Cases.	Deaths.	Cases.	Deaths.
Typhus.....	0	0	2	1
Typhoid Fever.....	24	7	36	9
Scarlet Fever.....	33	3	30	4
Cerebro-spinal meningitis.....	3	3	1	1
Measles.....	62	14	43	6
Diphtheria.....	26	13	22	14

The Cholera.—Since our last issue the news in regard to the outbreak on the European shore of the Mediterranean has not been so favorable as it was last week. A decided recrudescence has shown itself in Toulon and Marseilles, and the prevalence of the disease has become more marked in a number of Italian towns. Still, it must be said that the epidemic remains within moderate limits, and that the probability is yet considerable of its not attaining the proportions that seemed to be threatened at the outset. On Wednesday there was a rumor that the disease had broken out in this country—in an Iowa town, but the symptoms described in the newspaper reports do not appear to be those of cholera.

Yellow Fever at Key West.—On Friday of last week one of the officers of the United States steamer Galena was admitted into the Marine Hospital, suffering from yellow fever. On Wednesday the patient was reported to be doing well, no more cases had occurred, and, all necessary precautions having been taken, it was thought that the disease would not spread. The Galena sailed for Portsmouth, N. H., on the 16th inst.

The Society of the Red Cross.—At the International Congress, to be held in Geneva, Switzerland, on the first of September, the United States will be represented by Miss Clara Barton.

The International Medical Congress, it has now been decided, will hold its next meeting in Washington, in 1887.

The Paris Faculty of Medicine.—The "Union médicale" states that nominations have been made as follows to the vacant chairs: to the chair of surgical pathology, M. Lannelongue, M. Tillaux, and M. Le Dentu; to the chair of medical chemistry, M. Gautier, M. Boucharlat, and M. Henninger. We learn from the "Gazette hebdomadaire de médecine et de chirurgie" that the successful candidates were M. Lannelongue and M. Gautier.

Poisonous Medicines.—The law making it incumbent on apothecaries to affix special labels to medicines that are particularly dangerous has been pointedly enforced in Philadelphia recently, in a case where a young girl lost her life as the result of taking a number of strychnine pills "for fun," having seen a companion take one of them.

The Death of Dr. Burq was announced in the newspapers last Saturday as having taken place in Paris the day before. The person alluded to is probably the Dr. Burq who has been so well known in connection with metallo-therapeutics, and as having been a persistent advocate of the virtues of copper as a preventive of cholera.

The Virus of Hydrophobia.—The following letter was recently received by Dr. A. S. Heath, of this city, in reply to an inquiry addressed to M. Pasteur:

"8 août.

"August 8th.

"MONSIEUR: En l'absence de M. Pasteur, qui est à Copenhague, je réponds à la lettre que vous lui avez adressée.

"SIR: In the absence of M. Pasteur, who is in Copenhagen, I reply to the letter which you addressed to him.

"Dans un animal mort de la rage il n'y a de virulent que la salive, les glandes salivaires et le système nerveux. Le sang, les muscles, les viscères ne paraissent pas contenir le virus rabique. Je ne connais pas d'exemple d'inoculation de la rage par les manœuvres d'une autopsie.

"In an animal that has died of hydrophobia there is nothing virulent except in the saliva, the salivary glands, and the nervous system. The blood, the muscles, and the viscera do not appear to contain the virus of rabies. I do not know of an instance of inoculation of rabies by the performance of an autopsy.

"Le virus atténué que vous demandez est encore à l'étude. Il n'a été expérimenté jusqu'ici que sur les chiens, et dans l'état actuel de nos connaissances M. Pasteur n'oserait pas en faire, pour le présent, l'essai sur l'homme.

"The attenuated virus that you ask for is still under investigation. Thus far, it has been tried only on dogs, and in the present state of our knowledge M. Pasteur would not dare to make use of it on man.

"Recevez, Monsieur, l'assurance de ma considération la plus distinguée.

"Accept, Sir, the assurance of my highest consideration.

"DR. ROUX,

"DR. ROUX,

"le directeur adjt. au laboratoire de M. Pasteur."

"adjunct director of M. Pasteur's laboratory."

The "Fort Wayne Clinic," we are informed, is the title of a new monthly journal that is to be established at Fort Wayne, Ind.

The American Dermatological Association will hold its eighth annual meeting at Cranston's Hotel, below West Point, on Wednesday, Thursday, and Friday, the 27th, 28th, and 29th inst. The proceedings are expected to include the reading of the following papers: On a Peculiar Scaling Affection of the Glans and Prepuce, by the President, Dr. R. W. Taylor, of New York; On Miliaria and Sudamina, by Dr. A. R. Robinson, of New York; The Neuropathic Theory of Herpes Zoster—is it sustained by Clinical Facts? by Dr. G. H. Rohé, of Baltimore; A Case of Late Cutaneous Syphilis (Acneiform Syphiloderm of the Nose), illustrating the Occasional Necessity of Large Doses of Potassium Iodide, and A Case of Vitiligo involving the Whole Surface, by Dr. H. W. Stellwagon, of Philadelphia; A Case of General Idiopathic Atrophy of the Skin, A Case of Xanthoma Multiplex, and A Case of Sarcoma Cutis (with a supplementary account of a case previously reported), by Dr. W. A. Hardaway, of St. Louis; A Clinical Contribution to the Study of Lupus Erythematosus of the Hand, by Dr. J. N. Hyde, of Chicago; Suggestions respecting the Treatment of Acne and Acne Rosacea in the Male Subject, by Dr. S. Sherwell, of Brooklyn; A Case of Unilateral Chromodrosis, and Cases of Arsenical Dermatitis, by Dr. J. C. White, of Boston; and Dermatitis Herpetiformis, its Relations to Impetigo Herpetiformis, by Dr. L. A. Duhring, of Philadelphia.

The British Medical Association, as we learn from the "Medical Times and Gazette," created a new section at its recent meeting at Belfast—that of Pharmacology and Therapeutics.

Army Intelligence.—Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from August 10, 1884, to August 16, 1884: BARTHOLOMEW, J. H., Captain and Assistant Surgeon. Relieved from

duty at Vancouver Barracks, Washington Territory, and ordered to take station at Portland, Oregon. Par. 1, S. O. 114, Headquarters Department of Colorado, August 1, 1884.

HEIZMANN, C. L., Captain and Assistant Surgeon. Ordered to proceed to Fort Ontario, New York, and report for duty. Par. 3, S. O. 163, Headquarters Department of the East, August 13, 1884.

KANE, JOHN J., Captain and Assistant Surgeon. Granted leave of absence for one month. Par. 1, S. O. 160, Headquarters Department of the East, August 10, 1884.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the Navy for the two weeks ending August 16, 1884:*

SAYRE, J. S., Assistant Surgeon. Ordered to U. S. S. Independence.

BOGERT, E., Medical Inspector. To be Fleet Surgeon, Asiatic Squadron.

BABIN, H. J., Surgeon. Detached from Minnesota and ordered to Marine Rendezvous, New York.

WHITING, R., Passed Assistant Surgeon. Detached from Marine Rendezvous, New York, and ordered to Naval Academy as Member of Examining Board.

COOKE, G. H., Surgeon. Ordered to Naval Academy as Member of Examining Board.

RIXEY, P. M., Passed Assistant Surgeon. Detached from special duty at Washington and ordered to U. S. S. Lancaster.

WOOLVERTON, T., Surgeon. Ordered to U. S. S. Minnesota.

Society Meetings for the Coming Week:

MONDAY, August 25th: Canadian Medical Association (Montreal—first day).

TUESDAY, August 26th: Canadian Medical Association (second day); American Pharmaceutical Association (Milwaukee).

WEDNESDAY, August 27th: British Association for the Advancement of Science (Montreal—first day); Canadian Medical Association (third day); Auburn, N. Y., City Medical Association.

THURSDAY, August 28th: British Association for the Advancement of Science (second day).

FRIDAY, August 29th: British Association for the Advancement of Science (third day).

SATURDAY, August 30th: British Association for the Advancement of Science (fourth day).

OBITUARY NOTES.

Dr. Joseph Janvier Woodward, of the Army.—Although, as was generally known, Surgeon Woodward had been out of health and on sick leave for a number of months past, the news of his death, which took place last Monday, near Philadelphia, will come as a shock to the profession, for he was but little more than fifty years of age at the time of his death, and, in the ordinary course of events, his brilliant career might have been expected to be continued for many years to come.

Surgeon Woodward, major and brevet lieutenant-colonel, was born in Philadelphia in 1832. He pursued his academic course in that city, and was graduated in medicine from the University of Pennsylvania in 1853. He practiced medicine in Philadelphia until he was appointed an assistant surgeon in the army, August 5, 1861. He served with credit and distinction through the war of the rebellion, not only as concerned the performance of his duties to the Government, but also with regard to the advancement of his profession. His observations on camp dysentery and on typho-malarial fever, for instance, were of a nature to throw positive light upon many difficult questions connected with those affections and their management in armies; his original work in microscopy, and more particularly in photo-

micrography, after the termination of the war, was such as to give him a world-wide reputation; and, finally, the excellence of the literary work done by him, in conjunction with the late Surgeon Otis, in preparing the early volumes of the "Medical and Surgical History of the War of the Rebellion" helped not a little to give that work the character which was at once accorded to it wherever medical science is cultivated. Not only the medical corps of the army, but the profession at large, has sustained a serious loss in the death of Dr. Woodward at an age comparatively young.

Reports on the Progress of Medicine.

OPHTHALMOLOGY.

By CHARLES STEDMAN BULL, M. D.

LECTURER ON OPHTHALMOLOGY AND OTOLGY IN THE BELLEVUE HOSPITAL MEDICAL COLLEGE; SURGEON TO THE NEW YORK EYE AND EAR INFIRMARY; OPHTHALMIC SURGEON TO ST. MARY'S FREE HOSPITAL FOR CHILDREN AND TO THE NURSERY AND CHILD'S HOSPITAL.

Concussion of the Optic Nerve.—Schweigger ("Arch. f. Augenheilk.," xii, 2, 3) reports three cases of this nature following an injury. The first patient was a boy, aged eight, who three days before had fallen, and in falling had struck his face against the blunt end of an iron instrument. There was a small cutaneous wound in the region of the upper jaw, opposite the first molar tooth, which did not penetrate the buccal cavity, and was nearly healed. He became blind immediately after the accident. There was no external nor ophthalmoscopic evidence of any trouble, but there was not the faintest perception of light. The amaurosis remained for several days, and then the vision began to return, and gradually reached an acuity of $\frac{5}{10}$, with good eccentric vision and good color perception. The second patient was a woman, aged twenty-three, who struck her face a severe blow against a sharp stick, which lacerated the region of the inferior orbital margin. The eye was not injured, but became blind immediately, with no perception of light. The wound soon healed, and the vision gradually improved up to $\frac{6}{10}$, but the field was limited upward, and the lower half of the optic papilla was discolored. The third patient was a physician, who was thrown from his horse and struck on his head. The right eye became at once completely blind. Three months later the vision was $\frac{6}{10}$, and the visual field was intact; but the temporal half of the disc was discolored. In this case there was probably fracture of the base of the skull in the vicinity of the optic foramen.

A Rare Case of Retro-bulbar Optic Neuritis.—Van Milligen (Centrabl. f. prakt. Augenheilk.," Jan., 1884) reports an interesting case of this nature occurring in a man, aged forty, who came to him complaining of a gradually increasing exophthalmus of the right eye of three months' duration, which had been preceded by violent pain in the right cheek and temple. The right eye protruded outward and downward, but there was no interference in its motility, and cornea, iris, and media were normal. There was no sign of anything abnormal in the fundus, and no diminution of vision. The right nasal meatus was narrowed, and the infra-orbital groove very sensitive. The hard palate was normal, but on the left side of the soft palate was a swelling—hard, elastic, and very sensitive. There was no sign of any tumor in the posterior nares or pharynx. The submaxillary glands were quite swollen. Van Milligen made a diagnosis of carcinoma of the maxillary sinus and decided to resect the upper jaw, which was done according to the method of Nélaton. When the superior maxilla was removed, the entire tumor was exposed, and was seen to have

destroyed entirely the posterior wall of the antrum and extended into the retro-pharyngeal cavity. Upward the tumor had caused atrophy of the floor of the orbit, and it had also extended into the sphenomaxillary fossa. After the entire mass had been removed, all the surfaces were cauterized by Paquelin's cautery. The operation was done under carbolic-acid spray and dressed according to Lister's method. The flap healed by first intention, and there was no febrile reaction. The cavity was washed out every two hours with a solution of permanganate of potassium, and then iodoform was blown in. The operation was done on August 19th. On September 6th there was slight œdema of the conjunctiva, and the exophthalmus seemed to have slightly increased. The patient complained of cloudy vision, and there was found a central scotoma, with irregular limitation and a diameter of thirty-five perimeter degrees. $V. = \frac{4}{60}$. The œdema slowly increased, and the motility of the eye became limited. An incision was made through the cicatrix, and gave exit to about four grammes of pus. No change in the scotoma was noticed until September 15th, when a defect appeared in the lower portion of the field. The retinal vessels now presented an engorged appearance, and the temporal half of the disc was pale. The eye was now entirely immovable, and vision reduced to $\frac{2}{60}$. The marked ectropium of the lower lid and the increasing exophthalmus induced van Milligen to do a provisional tarsorrhaphy. When the stitches were removed eight days later, the eye was entirely blind. It was probable that the return of the growth had come from the temporal side of the cavity, from the sphenopalatine fossa, which had produced an inflammation of the orbital tissues. This caused an interstitial neuritis of the ocular end of the optic nerve; and as at this point the macula fibers run peripherally and toward the temporal side, the first symptom was a central scotoma. As the inflammation in the orbit reached the deeper side, part of the optic nerve lying farther back became involved, and with it naturally the optic-nerve fibers destined for the periphery of the retina; and thus was explained the diminution in the acuity of peripheral vision. Van Milligen explains the circumstance that the upper half only of the retina became non-sensitive by assuming that the orbital inflammation had a circumscribed character, and that only certain parts of the trunk of the optic nerve were attacked by the interstitial proliferation.

Bilateral Dermoid Tumor of the Sclero-corneal Margin.—Wicherkievicz (*Ibid.*) reports a case of this nature in a young girl aged eleven. In the right eye, in the infero-temporal quadrant, was a yellowish-white, elongated swelling lying partly on the cornea and partly on the sclera, which reached almost to the lower *cul-de-sac*. This growth measured ten millimetres in length, four millimetres in width, and two millimetres in height. It was slightly movable over the sclera, but was firmly united to the cornea, and the overlying conjunctiva was adherent to it and was highly vascularized. A similar, though much larger tumor, occupied a perfectly symmetrical place in the left eye, reaching quite to the *cul-de-sac*, and it covered about two thirds of the infero-temporal quadrant of the cornea. On the tragus of the left ear was a similar tumor like a small cock's comb, and on the right auricle was another growth, somewhat smaller. The conjunctiva overlying the tumor in the right eye was divided at the scleral periphery and the tumor grasped with a pair of toothed forceps, and it was then carefully dissected free from its attachments to the cornea and sclera. The conjunctiva was then dissected up on all sides and brought together with sutures. The same operation was done on the left eye. Both wounds healed very readily without any suppuration, and there has been no return of the growths.

The Visual Act in Strabismus Convergens Concomitans.

—Ulrich ("Kl. Mon. für Augenheilk.," Feb., 1884), in investi-

gating this subject, has divided his cases into groups or classes as follows: 1. Those patients who complained of spontaneous diplopia and antagonism or confusion of the visual fields dependent thereon he has grouped together under the name of physiological diplopia and confusion of the visual field, since the visual act shows the same relation as in sudden interruption of physiological vision. These cases were six in number, and in all of them there was periodic convergent squint; they were to be regarded as recent cases both as regards the duration and the periodicity of the squint. 2. A second group of cases consisted of those who complained of more or less frequent diplopia, but there was no antagonism of the visual fields. This group he calls *central exclusion*, and it consisted of eleven cases: three of periodic squint, one of alternating squint, and seven of uniocular squint. 3. In the third group of cases there was no complaint of either antagonism of the visual fields or of spontaneous diplopia, though the latter could be produced by holding prisms in any direction before the squinting eye. This group he calls by the name of *centro-paracentral exclusion*; it numbered nine cases: one of periodic convergent squint, two of alternating squint, and six of uniocular squint. 4. In a fourth group there was neither antagonism of the visual fields nor spontaneous diplopia, and the latter could only be produced by a prism with the refracting angle placed upward or downward before the squinting eye. As in these cases a horizontal strip of the retina of the squinting eye, of varying width, in which the macula lies, is excluded, he calls this group by the name of *horizontal exclusion*. In this group there were six cases, all of uniocular strabismus. 5. The fifth group was one of total exclusion. The entire retina of the squinting eye was concerned in the visual act only so far as it furnished a certain amount of clearness to the retinal perception of the fixing eye. Diplopia could not be produced by any method. In this class were grouped together two kinds of diametrically opposed cases, with reference to the visual acuity of the squinting eye. Total exclusion was present, almost without exception, in all cases of convergent squint in which the squinting eye was so amblyopic that fingers could only be counted eccentrically at a few feet. There were twenty-one cases of total exclusion without this high degree of amblyopia, viz.: four of periodic strabismus convergens, eight of alternating strabismus convergens, and nine of uniocular strabismus convergens. 6. The sixth class consisted of six cases of unilateral exclusion. 7. The seventh group consisted of two cases of periodic squint marked by exclusion, together with transient binocular vision. Ulrich holds that it is an incontestable fact that in children with strabismus convergens a previous binocular visual act has been present, even if the perception of the three dimensions of space has not yet been developed, and he gives his reasons for this belief as follows: 1. In a certain number of individuals in whom strabismus appeared at a not very early age, the previous presence of a binocular visual act can be directly inferred from the character of the visual disturbance. 2. In individuals whose age does not admit of an examination on this point it is still possible to demonstrate a faulty projection of the squinting eye. 3. In many adult individuals who suffer from alternating squint, with preference of one eye for fixation, antagonism of the visual fields may be demonstrated when they endeavor to fix with the usually squinting eye. 4. In periodic squint there is present the binocular visual act, together with exclusion. The strabismus convergens sometimes met with in small children during the course of a superficial keratitis Ulrich explains as follows: The photophobia accompanying the keratitis first causes blepharospasm in the affected eye, and, while the disturbance of diplopia and confusion of the visual fields are thus avoided, the squint may quietly develop.

Periodic Exophthalmus on Forward Inclination of the

Head.—Magnus (*Ibid.*) reports a case of this kind in a boy, aged thirteen, which had appeared immediately after birth. When erect, the eyes were normal in appearance and motility, and there was no difference in size between the two eyes. Both had a manifest hypermetropia of $\frac{3}{8}$ with normal vision. The inter-palpebral fissures were equal and normal. At the inner angle of the left eye was a blood-red, small, lobulated tumor, just beneath the caruncle. On lifting the upper lid, this tumor was seen to extend as a lobulated, blue-red structure as far as the superior *cul-de-sac*. On the nasal side it was not possible to mark out any limit to the tumor, but toward the temple the tumor did not extend beyond the middle of the lid. It seemed to come from the inner half of the orbit, and pushed the conjunctiva before it. The cutaneous surface of the lid was normal, but on the inner half of the free margin of the lid there was a blue discoloration. Similar blue spots existed on various parts of the patient's face. After the boy had sat with his head bowed forward for five minutes, the left eye became markedly dislocated outward and downward, and protruded far out of the orbit, but its motility was not impeded, and there was no diplopia. No examination could now be made of the orbital margin, owing to the presence of a firm, elastic tumor. After the boy had resumed the upright position for about one minute the eye returned to its normal position again. All the bluish spots upon the face became more or less prominent in the bowed position of the head. The diagnosis was made of varicose dilations of the veins in the left half of the face and head, especially upon the inner wall or face of the orbit, of congenital character.

The Position of the Visual Center in Man.—Nieden ("Bericht der ophthal. Gesellschaft," Beilageheft der "Kl. Mon. für Augenheilk.," 1883) reports a case of pure, unioocular, temporal hemianopsia of the right eye following an injury to the visual center of the left hemisphere. It occurred in a female, aged twenty-one, who displayed grave cerebral symptoms and right hemiplegia after a severe fall on the occiput. The absence of all pathological ophthalmoscopic symptoms, as well as of any visual disturbance of central or peripheral vision, seemed to point, in connection with other symptoms, to the existence of a subdural abscess in the region of the injury. This spot, which showed a transverse fissure, was trephined, and in the operation the dura and cortex were injured. No abscess was found, but there was inflammation of the dura. The general symptoms rapidly improved after the operation, but there appeared a defect in the temporal half of the visual field of the right eye, which, however, did not involve the immediate region of the macula. On the left side there was a general concentric limitation, which remained permanent, after all other symptoms had disappeared, and was accompanied at a later date by a defect in the median half of the visual field of the left eye in consequence of the cicatricial process in the wound of the cortex.

Astigmatometry and a new Astigmometer.—Zehender (*Ibid.*) here describes a new astigmometer, consisting of two pasteboard tubes, one of which fitted into the other and could be revolved around its long axis. At the objective ends of both tubes were two threads running diametrically, and arranged parallel to one another, so that, when the tubes were caused to slide the one within the other and rotated toward each other, the two systems of threads stood perpendicularly to each other and formed a rectangular cross. The apparatus rotates in a ring and is fastened to a stand. When the threads are so placed that they cross each other at right angles, and a non-astigmatic eye looks into the tube, it will see the cross sharply defined in all its parts. The eye which does not see both arms of the cross with equal distinctness is astigmatic.

The inner tube is then to be rotated until one of the two systems of threads appears sharply defined; the other system will then have its maximum indistinctness. The direction of the two chief meridians is then determined, and can be read off on the ring or on the rotation of the tube around the fixed ring. The particular spherical glass must then be found which makes the indistinct thread perfectly clear and defined, and this determines the degree of the a-tigmatism. By this instrument the direction of the chief meridians is determined by the rotation of the object of fixation before the eye of the patient, and cylindrical glasses are dispensed with. As an improved modification of the instrument, Zehender has inserted in front of the apparatus a spherical glass, which rotates round its transverse axis. By inserting a cylindrical glass in the apparatus and holding any spherical glass of the opposite refracting power in front of it, it is possible to determine a position of rotation, exactly defined by an index, in which the effect of the cylindrical glass is entirely neutralized. If stronger glasses are employed, it is possible to determine accurately to within one degree the position which any spherical glass must assume to correct the effect of any cylindrical glass.

Inflammation of the Capsule of Tenon.—Berger (*Ibid.*) reports the results of the examination of a phthisical eyeball and orbital contents removed from the body of a retin. In removing the eye from the orbit, a fibrous, coagulable mass was found inside the capsule of Tenon. Under the microscope this was found to consist of fresh (embryonic) connective tissue, with some endothelium from the capsule of Tenon. The capsule itself was thickened, loosened, and infiltrated with round cells. The neoplastic tissue rendered the removal of the eye from the capsule very difficult. It began at a point 3 or 4 mm. from the sclero-corneal margin, covered the entire surface of the eyeball, and extended backward into the supra-vaginal lymphatic space of the optic nerve. The cornea was shrunken; the anterior chamber was very small. The lens was absent. The ciliary body was separated from the choroid. The organized connective-tissue exudation which filled the supra-choroidal lymphatic space was in places 4 mm. thick. The degenerated iris was firmly united with the cyclitic membranes behind it, and indirectly with the cicatricial connective tissue. The retina was detached. In the posterior part of the eyeball, in the region of the optic nerve, the choroid was ossified. In the inter-vaginal lymphatic space of the optic nerve was a mass of neoplastic connective tissue.

Jequiry Ophthalmia.—Von Hippel (*Ibid.*) has a lengthy article upon this interesting subject. He began his investigations by endeavoring to determine whether there existed any demonstrable difference in effect between preparations made of the hulled beans and those made from unhulled beans, which question he answers in the negative. He then determined the minimum dose which would produce the characteristic ophthalmia in the normal conjunctiva of a rabbit and the granular conjunctiva of man, and also investigated the question whether the intensity of the inflammation was proportional to the degree of concentration of the maceration, and this question was answered decidedly in the negative. Von Hippel does not think that the temperature of the room in which the maceration is made has any influence upon its action. He agrees with Sattler, however, that after the fifth week the action of the jequiry is much slighter, and the inflammation caused by it is much milder, and after two months have elapsed it produces no effect whatever. But, when the beans are macerated in carbolized or salicylated solutions of definite concentration, the solution retains its activity for months, whether the vessel containing it is closed or open. The characteristic ophthalmia may always be produced, no matter how the maceration-solution is employed. The dos-

ing or regulation of the inflammation, according to the dictum of Wecker, is only possible within very narrow limits. Von Hippel does not regard the jequirity ophthalmia as absolutely without danger. He has used the remedy only in the various forms and stages of ophthalmia, and he has found it perfectly valueless in fresh granulations with marked conjunctival hyperæmia. But he has found it useful in chronic trachoma, with and without pannus, as well as in cases of shrunken conjunctiva and dense pannus. He dissents from Sattler's view, that jequirity ophthalmia is a new infection-disease, on the following grounds: 1. Because there is no analogy for the development of an infection-disease without any stage of incubation. 2. Because he did not succeed in a single instance in producing in a healthy eye a jequirity ophthalmia by the introduction of the secretion or of membranous shreds from an inflamed eye. 3. Because we have no right to regard the bacillus of Sattler as one peculiar to the jequirity-maceration, as he has found it but rarely either in the secretion or in the membranes. Furthermore, in the conjunctiva and infiltrated lid he constantly met with small, round micrococci in large numbers, which were of a very different shape from this bacillus and could not be mistaken for it.

New Inventions, etc.

THE EXHIBITION OF INSTRUMENTS AT THE RECENT MEETING OF THE AMERICAN LARYNGOLOGICAL ASSOCIATION.

DR. DOUGLAS presented two powder applicators, invented by himself.

DR. JARVIS presented a laryngeal snare.

DR. MACKENZIE presented a self-retaining nasal speculum, and also announced a proposed method of illumination of the nasal cavities.

DR. SEILER said, with regard to illumination of the nasal cavities by the Edison incandescent light, that he had tried it, burned himself, and would not think of trying to use it on a patient.

DR. INGALS presented an instrument designed for carrying the wire loop of a snare up behind the palate in removing nasopharyngeal growths. The instrument was shaped much like an ordinary post-nasal forceps, but on the upper surface of the blades were slides, which fixed the wire in notches at the extremity of the blades, while they were being introduced and opened out over the growth, and allowed the release of the wire after it had been fixed in proper position, the snare attached, and the loop partially tightened. He had found the instrument peculiarly serviceable in removing large nasopharyngeal tumors.

In the case for which he had the instrument constructed he had worked patiently for about three hours to apply first the steel and afterward the platinum wire, and had been obliged to give it up; but he had succeeded in about two minutes after he procured the instrument.

DR. SAJOUS presented three new instruments, and said: The tonsillotome herein described is somewhat smaller than Mathieu's, and the general conformation of the blades is preserved; but, instead of being furnished with a side-shaft for the fork, the spear which takes the place of the latter is attached to the main shaft by means of a thumb-screw. The lower edge of the spear is straight throughout one half of its length, then oblique, and rests in a grooved guide-screw which passes through a slot in the shaft and is fastened to the blade. When in action, it

perforates the tonsil and draws it out without causing the jar occasioned by the sliding-screw of Mathieu's. A spear is made to replace the fork, to avoid the difficulty generally experienced in separating the cut-piece from the latter; it holds it sufficiently to prevent its dropping into the throat, and can be easily withdrawn when partly in the tonsil, should a calcareous concretion be met with.

The thumb-ring is screwed on the main shaft, bringing it in a direct line with the finger-rings. By this arrangement the equilibrium of the instrument is maintained during the operation, whether operating on the right or the left tonsil.

The main shaft is not continuous with the blade-rings, as in Mathieu's; they are separate, and the latter are furnished with rods which fit and move easily in longitudinal grooves extending an inch and a half along the side of the shaft. By this arrangement any size of blade or ring can be adjusted to the shaft, the three sizes presented having served the inventor in twenty-seven operations, and in each case the rings fitting tightly around the tonsil, a desideratum for a neat operation and an even surface.



FIG. 1.



FIG. 2.

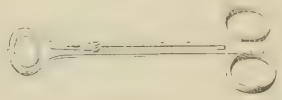


FIG. 3.

As shown in Fig. 1, the instrument is ready for the operation, the manipulation being the same as with Mathieu's. When the thumb-ring and finger-rings are approximated by the operator, the spear enters the tonsil until the beveled end of the main shaft slips under a small spring situated near the grooved guide-screw, from which a pin reaching down to the blade protrudes. The spring being raised, the pin is lifted out of the hole in the blade, setting it free, and the knife, following the motion of the fingers, cuts through the tonsil.

One of the annoying features of tonsillotomes in general is the difficulty attending their cleansing. Especially is this the case in Mathieu's, a screw-driver being necessary to disengage the blade from the shaft and blade-rings. In the new instrument, traction on the blade-rings with the left hand will cause them to slip half way out of the shaft until a pin projecting from the lower surface of one of them becomes engaged in a



FIG. 4.

"safety" groove near the end of the knife. The finger-rings are now pushed away from the thumb-ring, thus causing the blade to occupy the position it held before the operation. The

rings being thus allowed to slip farther out, they become disengaged from the shaft, leaving the blade exposed.

The tip of the spear is now turned aside by lifting it out of the grooved guide-screw and the piece of tonsil taken off. Each exposed part can be cleansed thoroughly and readjusted in a few seconds. If necessary, the whole instrument can be taken apart by merely unscrewing the thumb-ring.

Dr. SARGENT then showed a septum forceps, and said: This forceps, in general shape and size, is like Adams's, but the blades are separable, a turn of the thumb-screw, like that in an obstetrical forceps, causing them to fall apart. This enables the operator to introduce one after the other into the nostrils, and to lock them when in proper position. Instead of forming a part of one of the blades, the knife or punch is independent and can be adjusted to it by passing the shouldered pin with which it is furnished, as shown in Fig. 5, through a hole near the end of the instrument. This enables the operator to use any shape of knife he may think adaptable to his case.



FIG. 5.

The knives can be turned in any direction, according to the longitudinal axis of the deviation, and but one forceps becomes necessary for punching and straightening, the knife being easily taken off.

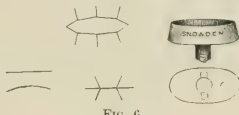


FIG. 6.

The knives and punches shown in Fig. 6 are a small oval punch to perforate the septum, a Steel's punch, an elliptical punch with diverging blades to cut off sharp bends of the cartilage and reduce its elasticity when being straightened, and two small blades—one curved and one straight—with which any shape of figure or cut can be made in the septum. For instance, the shape of saw-teeth in a redundant septum can be made by alternately raising and lowering the handle of the forceps. The sharp ends will overlap and give a result which could not be obtained with a small punch.

Dr. SARGENT also showed a uvulatomer and said: The uvulatomer consists of a pair of strong scissors with the handles slightly bent. Its lower surface is armed with a pair of toothed claws, the stem of which is connected with the handles by means of two little arms. These being attached loosely, the claws have free longitudinal motion, guided by the pivot-screw of the scissors, and kept in position by a cap which not only serves that purpose, but also approximates the toothed edges of the claws by the resistance it offers to their outer edge.

The instrument being held with the palm of the hand directed toward the operator—that is to say, with the thumb and finger passed through the rings from below upward (the bend being just sufficient to prevent them from interfering with the line of vision)—it is introduced closed into the mouth. As soon as the point has reached the uvula, the rings are separated, and the organ hangs between the teeth of the claws. The rings being now approximated, the claws close on the uvula before

the blades touch it, hold it fast, and bring it forward by bending it at its base. The scissors cutting it in that position, the cut surface is oblique and posterior. When food is swallowed,

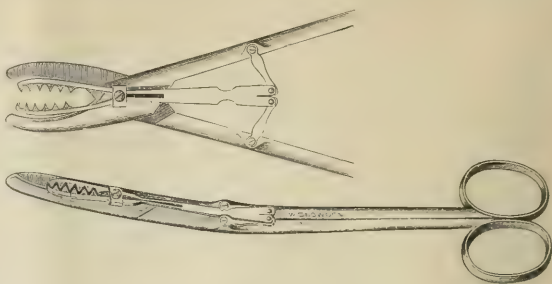


FIG. 7.

the horizontal surface obtained with other instruments is exposed to the bolus, and scraped and kept sore by it for several days. With the posterior oblique surface obtained with this instrument, the bolus only touches the anterior surface of the stump, the cut surface resting against the pharynx. The healing process is more rapid, and a better stump is obtained. Slipping of the uvula between the blades is impossible, and the cut is always complete.

Dr. DELAVAN called the attention of the association to a new method for the alimentation of patients suffering from dysphagia, and presented an instrument designed to facilitate the feeding process.

The essential principles of the method were (1) the use of a tube of small caliber instead of the ordinary stomach-tube, and (2) the introduction of this tube, not into the stomach, but simply below the pharyngeal constrictors, or beyond the seat of the difficulty. The instrument consisted of an ordinary conical-

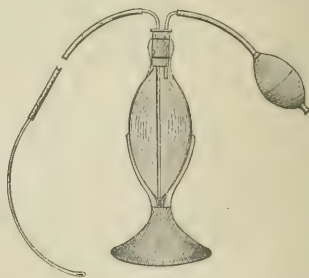


FIG. 8.

bottomed soda-water bottle, furnished with an India-rubber stopper. In the latter were two perforations, through each of which was passed a glass tube, bent just outside the cork at a right angle. One of these was short, the other long enough to reach the bottom of the bottle. To the short one was attached a Davidson air-compressor. To the other a flexible rubber tube, connected with an English flexible woven catheter, in size from No. 8 to No. 18. The catheter having been introduced into the oesophagus, the fluid in the receiver was forced through the tube by compressing the air in the receiver by means of the rubber bulb.

Dr. DONALDSON remarked that he had found the most convenient instrument for introducing food into the stomach to be the fountain syringe.

Dr. SEILER and others offered certain theoretical objections

to the tonsillotome and the uvulotome presented by Dr. Sajous, but Dr. Sajous replied that, practically, the objections did not hold except the one with regard to the curve of the handles of the uvulotome, and that would be corrected. He had employed the instruments in a number of cases with entirely satisfactory results.

Dr. COHEN said, with regard to deformity of the nasal septum, that he had not found instrumental treatment of much value. Lately he had been in the habit of dilating the alæ, putting in a nasal plug of cotton, and leaving it there a day, during which time it formed a mold of the cavity. He then had a mechanic form a wooden plug from this, which the patient wore an hour or two every day for some time. The results had been very satisfactory. In two cases, however, the wooden plug had given rise to considerable ulceration of the septum, but, by taking the plug out and introducing cotton, the ulceration had disappeared.

Miscellany.

THERAPEUTICAL NOTES.

The Action of Convallaria on the Heart.—From a number of elaborate experiments on terrapins and frogs, Dr. H. Y. Beyer, of the navy ("Proceedings of the Naval Medical Society," ii, 1, 1884), concludes: 1. That convallaria increases the rate of the heart's action. 2. That the work which the organ has to do is slightly increased. 3. That the drug raises the intra-cardiac and aortic pressure. 4. That both auricles and ventricles are arrested in systole when medium doses are used. 5. That large doses arrest the heart at once. 6. That the results are most probably due to direct action on the muscular substance of the heart. 7. That the drug has a decided cumulative action, acts much slower than digitalis, and is much more persistent after the heart is once under its influence. He adds that the whitish, shrunken, and puckered appearance which the heart presents when very much under the influence of convallaria, the slow appearance of this phenomenon, and its persistence, all speak in favor of the view that the muscular substance of the heart is much interfered with. So far as his experiments go, the author thinks that they warrant the conclusion that convallaria is contra-indicated in advanced cases of cardiac disease in which the muscular structure of the heart has undergone degeneration. Convallamarin should be used in preference to any other preparation of the drug, and, on account of its cumulative action, not more than one full medicinal dose should be given in a day.

Hypodermic Injections of Iodoform in Syphilis.—The "Bulletin général de thérapeutique" gives a summary of an article recently published in a German journal by Dr. E. Thomann, of Graz, who has treated a number of cases of severe syphilis with subcutaneous injections of iodoform, and has always observed an evident amelioration after ten or twelve injections. He uses a mixture of six parts of iodoform and twenty parts of glycerin, and injects from 30 to 75 centigrammes of the mixture at a time. The injections have never caused abscesses, but only a little swelling and pain at the site of the puncture. Iodine may be detected in the urine at the end of two hours, but no odor of iodoform can be perceived in any of the excretions. A solution of iodoform in olive-oil was tried also, but it was found more irritating than that in glycerin.

The Treatment of Conjunctivitis.—The treatment of this affection, whether simple, catarrhal, contagious, the result of a physical or chemical irritant, or occurring as the sequel of an infectious disease, as carried out at M. Abadie's clinic, has been furnished to the "Progrès médical" by M. Darier, the *chef de clinique*.

At the outset, when there is only a conjunctival hyperæmia, with little or no secretion, the eyes are to be washed five or six times a day with a solution of boric acid in distilled water—one part to thirty. By

reason of its antiseptic and slightly astringent properties, this solution often prevents the development of grave forms of the disease or of those which are apt to become chronic; in the course of a few days the conjunctiva will be found to have resumed its normal aspect, and the symptoms to have disappeared rapidly.

In the graver cases, where the conjunctiva is very red and turgescient, and the sclerotic can scarcely be seen through the gorged vascular network, while the lids are swollen, red, and stuck together in the morning with a muco-purulent secretion, cauterization should be practiced with a solution of nitrate of silver in distilled water—one to two hundred. The manner in which these cauterizations are performed is of the greatest importance. In the hands of others than specialists the solid stick, pure or mitigated, is not very satisfactory; instillations of collyria are not much to be trusted to; so the invariable custom is to prescribe the use of titrated solutions, directing that the whole conjunctival surface be carefully brushed with them. To do this, it is necessary to make the patient look down, so as to cause the whole upper lid to stand well out from the globe; the lid is then to be seized by its ciliary border and suddenly turned upward, slight pressure being made at the same moment with the handle of the brush on the upper edge of the tarsal cartilage, in order to invert it. In this way, the patient looking down all the time, the upper conjunctival *cul-de-sac* may be cauterized at every point; to touch the lower sac it is sufficient to make the patient look up while the ciliary border is pressed down, which will evert the lid completely.

The application is to be made more or less lightly, according to the intensity of the inflammation. In cases of some severity the brush wet with the solution should be applied until the conjunctiva assumes a rosy-white appearance; the eye is then to be bathed freely with pure water, the solution of chloride of sodium being altogether useless; and that is all. For the first two or three days the cauterizations should be practiced every twenty-four hours, and then every forty-eight hours. In the intervals the eyes should be bathed frequently with the solution of boric acid.

When the conjunctivitis has become chronic, it is most commonly accompanied by a moderate marginal blepharitis; it will then be well to use compresses wet with a mixture of twenty drops of liquor plumbi subacetatis and half a tumblerful of water, or a solution of sulphate of zinc in distilled water—one to three hundred—the compresses being held upon the half-open lids for a few minutes.

Hydrastis Canadensis.—The "Lancet" states (without giving the source of its information) that M. Schatz has employed a fluid extract of this drug in fifty cases of uterine hemorrhage due to various causes. The results have been very satisfactory in about two thirds of the cases. Metrorrhagia due to fibroid tumors, post-puerperal metrorrhagia, and menorrhagia about the time of puberty, were the affections most readily relieved. The fluid extract was given in doses of twenty drops three times a day. The treatment was begun a week or more before the commencement of the period of menstruation. Under its influence the duration of the catamenia was diminished and the blood discharged was lessened, and in some cases there was actual suppression. M. Félner has investigated the physiological action of the fluid extract of *Hydrastis canadensis* on dogs, and attention was strictly confined to the vessels, heart, small intestine, and uterus. In large doses (two to five grains [*sic*]) the fluid extract injected directly into the veins momentarily raises the intra-vascular pressure; but this first phase is soon followed by another in which the blood-pressure sinks permanently below the normal level, and death may ensue. When doses of 1·2 to 1 gramme [*sic*] are employed in the form of hypodermic injections, the lowering of the blood-pressure is less pronounced and takes longer to appear, but it is still persistent. At the same time the elevation of the intra-vascular pressure lasts a longer time. In still feeble doses the initial effect is, on the contrary, a diminution of the blood-pressure of very short duration; and the secondary effect is an elevation of the blood-pressure, which persists indefinitely. When a number of minute doses are injected in succession, the final result is the same as with a single dose. The subcutaneous injection of a strong dose (two grammes) determines, first, a transient decrease in the blood-pressure; this then passes away for a brief period, to be again followed by a fresh lowering, not in a continuous fashion, but by a series of well-marked oscillations. The results are the same when the drug is given by the rectum or stomach.

Previous section of the splanchnic nerves does not appreciably modify the effects produced by intra-venous injection of small or large doses of the fluid extract. The same fact holds good of compression of the abdominal aorta. Section of the cervical portion of the spinal cord does not stop the action of the drug in lowering blood-pressure. Strychnine can to a certain extent undo the effects of hydrastis on the blood-pressure. By direct inspection the small intestines are observed to be injected during the period of lowered blood-pressure, and to be exsanguinated when the blood-pressure is raised again. Hydrastis is believed thus to have a powerful effect on the vaso-motor apparatus, due to an excitation of the cerebral centers. During the first stage of the action of the drug the pulse is slowed. This delay may go on to complete arrest of the heart's action; it appears to be due to excitation of the central end of the vagus, because it does not occur when the pneumogastric nerves are divided. After the injection of large doses the slowing of the pulse with syncope is met with during the second stage, when the blood-pressure is diminished. In this stage previous division of the vagi exercises no influence on the frequency of the heart's action. All injections give rise to contraction of the womb, both of its body and of its horns; the maximum effect is produced a short time after the injection; later on, however, manifest contractions do take place, chiefly of the cornua. The uterine contractions are synchronous with those of the blood-vessels.

The Quarantine Defenses of New York.—The "Sanitary Engineer" publishes the following summary: A maritime quarantine for the protection of the public health of New York was established as early as the year 1758, but it is under the General Quarantine Act of April 29, 1863, and its subsequent amendments, that the present quarantine is administered. The quarantine establishment consists (1st) of an outer boarding-station—a ship at anchor in the lower bay, five and a half miles from the Narrows and twelve and a half miles from the Battery, or the extreme lower end of Manhattan Island; (2d) an outer quarantine roadstead in the lower bay about one mile inside the outer boarding-station; (3d) an artificial island (Swinburn's Hospital Island) containing ten detached hospital buildings, two and a quarter miles outside the Narrows; (4th) Hoffman Island, one mile nearer the Narrows, and an "observation station" containing buildings for the accommodation and observation of 1,600 persons; (5th) the upper quarantine roadstead, just inside the Narrows, and the regular boarding-station, the year round, for all vessels, and where the affairs of quarantine are administered, including residences for officers and men, about one mile south of Clifton Landing; and (6th) Robbins's Reef Anchorage, where infected vessels are discharged and cleansed.

The affairs of quarantine are administered by a quarantine commission of three members and the Health Officer of the Port, appointed by the Governor and confirmed by the Senate, and the Mayors of New York city and Brooklyn are *ex-officio* members of the commission.

The Health Officer, under the law, must be a doctor of medicine in good standing, with ten years' experience in the practice of his profession, and be practically familiar with the diseases subject to quarantine. His duties are the general superintendence and control of quarantine, the care and treatment of the sick, and the carrying out of all the provisions of the law and regulations. He has power to administer oaths and take affidavits. He can at all times call upon the metropolitan police to the number of ten to aid him in an emergency to enforce the duties conferred upon him, or to direct in writing any constable, or even citizen, to pursue and apprehend any person violating quarantine law or regulations, and can detain such persons ten days. A person obstructing the Health Officer is guilty of a misdemeanor punishable by a fine not less than one hundred nor more than five hundred dollars, or by imprisonment from three to six months. He has power to *appoint or dismiss at pleasure* all employees under himself, and in conjunction with the Quarantine Commissioners, to license lightermen, steredores, and as many others as may be found necessary for the care and purification of vessels, merchandise, baggage, etc. The law provides for two deputy health officers, whom he appoints and whom he is directly responsible for, and who are authorized to perform all the duties in his absence. The Health Officer, his deputies and assistants, take an oath of office. His prescribed duties are:

To board every vessel subject to quarantine or visitation by him, as soon as practicable after her arrival; to inquire as to the health of all persons on board, and the condition of the vessel and cargo, by inspection of the bill of health, manifest, log-book, or otherwise; to examine, on oath, as many and such persons on board as he may judge expedient to enable him to determine the period of quarantine and the regulations to which such vessel and her cargo shall be made subject, and to report the facts and his conclusions, and especially to report the number of persons sick and the nature of the disease with which they are afflicted, to the Quarantine Commissioners.

To exercise dispatch in the disposal of persons arriving in infected vessels; to have the bodies of persons who have died of malignant diseases on board of infected vessels arriving, and such as shall have died in the hospital, interred in the quarantine burying-ground; and to proceed, without delay, in the purification of vessels, merchandise, baggage, dunnage, and other articles in quarantine; and, whenever he shall judge the same free from infection, to permit the removal thereof. No vessel or cargo, however, that has been in quarantine shall be permitted to proceed to New York or Brooklyn without the approval of the Mayor or Board of Health of those cities respectively.

To secure the effects of the deceased persons in quarantine from waste and embezzlement, and make a true inventory thereof, and, when the rightful claimants of such effects do not appear within three months, to deliver the same, with such inventory, to the Public Administrator, unless the said property be of such description as ought not to be removed or may be destroyed under the provisions of the act.

To keep the Boards of Health of New York and Brooklyn at all times informed of the number of vessels in quarantine, of the number of persons sick in the floating hospital, and of the diseases with which they are afflicted.

To receive any vessel or merchandise sent to him by the health authorities of New York or Brooklyn, dangerous to the public health.

To receive into the floating hospital any case of yellow fever that shall have been contracted in quarantine establishment or elsewhere.

To have all vessels, warehouses, and merchandise in quarantine designated by a yellow flag; and to prohibit communication with, or passage within range of, such vessels and places, except under such restrictions as he may designate as being compatible with safety.

Whenever the Health Officer, in the performance of his duties and in the execution of the powers imposed and conferred upon him by law, or by any regulation or ordinance made in pursuance of any statute of this State, shall order or direct the master, owner, or consignee of any vessel subject to quarantine to do any act or thing, or comply with any regulation, relative to said vessel, or to any person or thing on board thereof, and said master, owner, or consignee shall neglect or refuse to comply with such order or direction, the said Health Officer shall have power to employ such persons and assistance as may be necessary to carry out and enforce such order and direction, and the persons so employed shall have a lien on such vessel, her tackle, apparel, and furniture, for their services and expenses.

Vessels arriving at the port of New York are to be subject to quarantine as follows: All vessels from infected ports, or which shall have arrived at any such place, and proceeded thence to New York, or on board of which during the voyage any case of such disease shall have occurred, or vessels from any place (including islands) in Asia, Africa, or the Mediterranean, or from any of the West Indies, Bahama, Bermuda, or Western Islands, or from any place in America, in the ordinary passage from which they pass south of Cape Henlopen.

What Diseases are Quarantinable.—The only diseases against which quarantine applies are: Yellow fever, cholera, typhus or ship fever, and small-pox, or any disease not now known, of a contagious, infectious, or pestilential nature.

Merchandise subject to quarantine are: 1. Clothing, personal baggage, dunnage, rags, paper-rags, hides, skins, feathers, hair, and all other remains of animals, cotton-hemp and woolsens, on which quarantine is obligatory. 2. Sugars, silks, linen, and cattle, on which it is optional.

The law provides that the Commissioners of Emigration shall receive into their hospitals all alien passengers arriving at the port of New York

who shall be affected with any contagious or infectious disease other than yellow fever. For this reason small-pox patients are sent to Blackwell's Island, and typhus or ship-fever patients to Ward's Island; the cholera or yellow-fever patients to be taken care of by the Commissioners of Quarantine, at their hospitals on Swinburn's Island.

Of the duties of pilots in relation to vessels subject to quarantine, the law requires that the pilot must use his utmost endeavors to hail every vessel he shall discover entering the port, and to interrogate the master in reference to all matters necessary to enable him to determine whether such vessel is subject to quarantine, and he has the power to order the master to proceed to the anchorage in the lower bay if quarantinable diseases are found on board.

The routine of quarantine, in brief, is: Vessels from infected ports are brought by the pilot to the lower boarding-station. The deputy Health Officer there examines her, transferring the sick (if any) to Swinburn's Island, and those that have been exposed to Hoffman Island until after the period of incubation of the disease is passed, where their clothes and persons are washed, and what will not wash fumigated. Vessels from England, or from presumably healthy ports, pass to the upper boarding-station, where they are examined and allowed to pass, or returned to the lower grounds, as the case demands.

If, in the judgment of the Health Officer, the vessel requires it, he may order the following sanitary measures: Baths and other bodily care for the person; washing or other disinfecting means for clothing; displacement of merchandise on board, or complete breaking out of the vessel; subjection to high steam, incineration, or submersion at a distance below the surface of the water, for infected articles; the destruction of tainted or spoiled food or beverages; the complete ejection of water; thorough cleansing of the hold, and the disinfection of the well. In short, the complete purification of the vessel in all her parts by the use of steam, fumigation, force-pumps, rubbing, or scraping, and saturation with a solution of sulphate of iron, and finally sending to quarantine anchorage until disinfection be perfected. Whenever these operations are necessary, they shall always be executed before admission to pratique.

Persons with insufficient evidence of vaccination are not allowed to proceed until they are vaccinated.

The American Association for the Advancement of Science.—The permanent secretary, Mr. F. W. Putnam, of Salem, Mass., announces that, in order to allow of an interchange of courtesies between the British and American associations, and enable the members of the two to attend both meetings, the meeting of the latter this year will take place at a later date than usual. The British Association will meet at Montreal on Wednesday, August 27th, and the meeting will close on the following Tuesday. On Thursday, the 4th of September, the American Association will meet at Philadelphia.

The Council of the British Association has invited the fellows of the American Association to join in the meeting at Montreal on the footing of honorary members, and the American Association and the Local Committee of Philadelphia have invited the members of the British Association, with their near relatives who may be with them, to take part in the Philadelphia meeting. Invitations have been sent to the leading scientific societies abroad, inviting them to send delegates to the Philadelphia meeting. The probabilities, therefore, are that the Philadelphia meeting will be largely international in its character, and it is likely that steps will be taken to form an International Scientific Association. At the same time with the Association meeting the International Electrical Exhibition will be taking place in Philadelphia, and probably at the close of the week an Electrical Congress will be held. Other bodies will also be in session during the week, among them the Pennsylvania State Agricultural Society and the American Institute of Mining Engineers.

The Local Committee are actively engaged in perfecting their arrangements for the accommodation of the large number of persons which the unusual circumstances will call to Philadelphia, and, while the contemplated arrangements provide for two thousand members of the Association, it is earnestly requested by the committee that they be notified as early as possible of the intention of members and their families to be present. All members who intend to be at Philadelphia

should, therefore, notify the Local Secretaries at an early day, and at the same time give their addresses where the Local Circular will reach them, if they are to be absent from their permanent homes during the summer. Definite information in relation to lodgings and transportation will be given in the Local Circular, with much other important information. The hotels have agreed to reduce their rates to the members of the Association, and lodgings will be available at from one to four dollars a day, and private hospitality will also be offered, particularly to the foreign guests.

A series of receptions will be offered the Association and its guests, including one at the Academy of Music after the President's Address, a reception at the Academy of Fine Arts, a Garden Party at Haverford College, and a Microscopical Exhibition at the Academy of Natural Sciences. The Botanical Section of the Academy of Natural Sciences will hold at the Academy a special meeting for botanists. There will also be visits to the International Electrical Exhibition, the Zoological Gardens, Fairmount Park, Independence Hall, and other places of interest, and the various institutions in the city will welcome the Association to their halls. During the meeting free excursions will be offered to the sea-shore, the anthracite coal regions, and other places of interest, and possibly limited excursions to more distant points, after the meeting. Special botanical and geological excursions will also be given.

The Local Committee are now preparing a map and guide-book for the use of members. The Association Post-Office will be established in the Academy of Music, under charge of General Huidekoper, postmaster of Philadelphia, and letters and packages bearing the letters A. A. S. will be there delivered. Special free telegraphic facilities for personal messages have been secured, including the use of the transatlantic cable for the benefit of foreign guests. The transportation of specimens, apparatus, etc., will be attended to by the Local Committee, who will give particulars on receiving applications through the Local Secretaries. Every possible care will be taken of objects sent for exhibition or use during the meeting, and a suitable hail will be provided for them. It is hoped that members having specimens or apparatus of particular interest will exhibit them at the meeting.

The meeting will be called to order, in general session, at ten o'clock, on Thursday morning, September 4th, in the Academy of Music, by President C. A. Young, of Princeton, who will resign the chair to the President-elect, Professor J. P. Lesley, of Philadelphia. After the adjournment of the general session, the sections will organize in their respective halls. General sessions and sections will be held on Friday. The vice-presidents of the sections will probably give their addresses during the day, and in the evening President Young will deliver his address at the Academy of Music, after which there will be a reception tendered to the members of the Association and their invited guests by the Local Committee and citizens of Philadelphia. Saturday will probably be given up to excursions and receptions. The general programme for the rest of the meeting will be similar to that at previous meetings.

The headquarters of the Association will be at the Academy of Music, which is on Broad Street, in the center of the city, very near the station of the Pennsylvania Railroad and several large hotels. The sections will be amply accommodated in other halls in the immediate vicinity.

The offices of the Permanent Secretary and Local Committee, the Association Post-Office, etc., will be at the Academy of Music after September 1st; previous to that they will be at the Academy of Natural Sciences. The Permanent Secretary will establish his office in Philadelphia on August 22d.

The British Pharmacopœia.—Dr. Robert Farquharson writes as follows to the editor of the "British Medical Journal": "Understanding that the Medical Council have it in contemplation to edit a new edition of the 'British Pharmacopœia,' I venture to express a hope, although not a very confident one, that something may be done to bring this antiquated volume into harmony with modern usage. By this I do not mean the revision rendered necessary by self-progress, and the introduction of those new drugs which have established their claim to popular favor; but I plead for a drastic and thorough overhauling of every page, in the true spirit of radical reform, and the summary ejection of many useless and superfluous things. The vigorous application

of the pruning-knife might reduce the size of the book by at least one third without impairing its efficiency; and the student will bless the day which has released his overloaded memory from some part of its burden. Nothing in connection with *matéria medica* has surprised me more than the way in which many so-called remedies, which no one ever dreams of using, and which probably could not be found in case of need, are permitted to cling, with the conservative tenacity of barnacles, around our modern text-books. Some mysterious rumor of special virtue, handed down from edition to edition, forms the excuse for the retention of these effete articles; and, when they are driven out of the fastnesses of gout and rheumatism, they may safely take refuge under the shadow of 'chronic spine-diseases,' from which it is hardly worth any one's while to dislodge them. Hence, we have *dulcamara* and *mezezon*, and *sassafras* and *sarsaparilla*, and *hemidesmus* and *canella*, and *cusparia* and *krameria*, and *serpentaria*, and other rubbish of the kind, reverently greeted by professors on their lecturing rounds; and woe be to the student who does not possess at least a nominal acquaintance with them.

"I would at once throw these and many other relics of a decayed superstition overboard, and would especially ask for the expulsion of the *enema tabaci*, whose use might fairly entitle any practitioner to the honors of the Old Bailey, of all the preparations of *conium* but the succus, of all the vapors, of *aqua chloroformi*, and of many of the more fancy varieties of iron and mercury. Opinions may differ about phosphorus; mine decidedly is that it is an overrated remedy, uncertain, dangerous, and, basing its reputation on somewhat ambiguous evidence, I should like to see it deprived of its official sanction; but if it be too much to expect that it shall disappear from the '*Pharmacopœia*,' may I venture to hope that some preparations may be devised which may enable us to prescribe it in an unaltered state? Regard for your space prevents my going into greater detail, but I make this appeal principally in the interests of the student, whose mental capacity is unfortunately unable to keep pace with the expansion of modern science, but who is expected to know everything about everything which his curriculum includes. Chemistry may tax the devotion of a life, but he must know it all; physiology might well claim his undivided energies, but it must take its place with other objects of study; and four short years have to do it all. If we can take off some part of this crushing burden, we shall indeed be benefactors of our species; and it will be something if we can tell the rising generation at our medical schools that fifty or sixty drugs, which they were formerly called upon to recognize, have now been consigned to the limbo of the past.

"May I conclude with a word about doses? I have always regretted that the '*Pharmacopœia*' should have made any reference to this subject, because their directions, to be of any use, should be entirely authoritative, and I am sure I am correct in saying that no practitioner goes to that source for his information and guidance. It is not to be supposed that any charge of malaprapaxis could be sustained if misadventure followed the use of a drug in quantities larger than that officially recognized; and all that now happens is the occasional inconvenience and discredit of having our prescriptions sent back by the druggist for revision if he thinks that the dose is too large. This may happen to any one who orders more than ten grains of quinine, twenty minims of tincture of belladonna, thirty grains of bromide of potassium, ten grains of iodide of potassium, eight minims of liquor arsenicalis, or thirty minims of tincture of perchloride of iron; and on this question, at least, opinion will be unanimous that revision is required."

Beer-drinking and Heart Disease.—The most essential factors of the living heart are unquestionably its neural and muscular elements. It may seem superfluous to assert so plain a truth; nevertheless, the necessity of bearing this fact in mind is demonstrated by every-day experience. If the heart be the subject of debate among medical students at our hospitals, how much do we hear of the murmurs and how little of the condition of the myocardium! Our present object is to draw attention to a class of cases which have not received the wide study they deserve. Idiopathic hypertrophy and dilatation of the heart are not phrases which carry their own credentials. To speak openly, the term "idiopathic" is regarded by scientific physicians as a pleonastic cloak for our ignorance. Cardiac hypertrophy of idiopathic

sort is said to be of common occurrence in Munich, as compared with other cities. Spatz found that, of 638 men, no less than 35 were affected with so-called myocarditis. Among 433 women there were 23 cases. Of 290 men, between the ages of thirty and sixty, there were 41 cases of myocarditis, or about 14 per cent. Of 144 women, at the same period of life, only 10, or about 7 per cent., were affected. Hermann's reports showed 49 cases of muscular disease of the heart in the male among 305 necropsies, while only three females had this condition. Von Buhl looked on these instances of cardiac hypertrophy as the result of chronic myocarditis, which usually ended fatally in consequence of fatty degeneration of the muscle. Bollinger, who has re-studied this subject, can not find any evidence of inflammatory changes or fatty degeneration. At his suggestion, Schmidebauer undertook to establish the extent of the prevalence of cardiac hypertrophy in Munich upon a statistical basis, with a view to making clear its causation. Among 1,000 necropsies there were 46 cases (32 men and 14 women) in which the cause of death was attributed to simple hypertrophy of the heart. As an associated condition, not as a cause of death, idiopathic hypertrophy of the heart was found in 33 other cases (23 men and 10 women). All cases of enlargement of the heart due to lesions of the valves, or disturbances of the pulmonary circulation, or associated with arterial sclerosis, or granular kidneys, were said to be excluded. Some of the cases were attributed to prolonged muscular effort. But the greater number were believed to be due to habitual excess in beer-drinking, attended with a true plethora, or overcharge of blood. It is argued that the habitual consumption of beer in large quantities tends to enlarge the heart by the direct action of the alcohol on its tissues, by the increase in the amount of fluids in the body, and by the belief that the nutritive ingredients of the beer are easily assimilated. Statements are made to the effect that the average weight of the heart in men is relatively greater in Munich than elsewhere. Both sides of the heart participate in this hypertrophy. It may naturally be asked how it is that sufferers from simple hypertrophy are prone to die of an affection which apparently contains no fatal elements in its composition. The phrase simple or idiopathic hypertrophy is in this respect misleading. Exhaustion of the nervous apparatus without obvious disease of the muscular tissues is the proffered explanation of the fatal result—an explanation not altogether free from valid objections. As an interesting fact it may be stated that during the year 1882 the average amount of beer consumed by each person in Germany ranged, in different districts, from 54 to 186 litres, in Bavaria it reached 233 litres, and in Munich 432.—*Lancet*.

Splenectomy.—According to the "*Medical Times and Gazette*," Dr. Kéberlé recently related to the Société Médicale de Strasbourg his second case of splenectomy, performed on a woman, aged forty-six, for an hypertrophied spleen, the result of intermittent fever. Both this and his first case were examples of the largest spleens that had ever been removed, the organ in both cases resting on the pubes, while there was also great enlargement of the liver. The spleen in the present case measured 40 centimetres in length, being only five centimetres less than in the other case, in which the organ, when emptied of its blood, weighed 6,800 grammes. The affection had run a rapid course of less than a year and a half, and at last there was effusion into the pleura, pericardium, and peritonæum, the patient being much emaciated and cachectic, passing but a small quantity of urine and exhibiting a temperature of from 102° to 104° F. As in the former case, there was great adhesion to the diaphragm. In that case fatal hemorrhage had taken place from the vessels of the adhesions, but in the present case this was prevented by three ligatures on the splenic vessels. As a consequence of the constriction caused by these, arterial hemorrhage took place from a large number of cutaneous vessels along the line of incision, where complete hemostasis had prevailed for more than an hour. A great deal of blood (which was very plastic and rich in coagulable fibrin) was in this way lost; but, in spite of this, the patient rallied well for a while after the operation, which lasted nearly three hours; but in about an hour after its completion she was seized with convulsions and died. This case is another example of the danger of removing large spleens; but the operation was only performed at the woman's insistence, after its danger had been completely explained to her.

Original Communications.

OLEATE OF COPPER:

ITS EMPLOYMENT IN FIVE HUNDRED CASES OF PARASITIC DISEASE OF THE SKIN.

WITH ANALYTICAL TABLES.

By F. LE SIEUR WEIR, M.D.,

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WITHIN the last few years the treatment of vegetable parasitic diseases of the skin has received an impetus never before known, owing to the introduction of certain new remedies and new remedial measures. Perhaps it may not be altogether correct to speak of the remedies collectively as new, for some of them are but old friends under a new and more efficient guise. We all remember the old-fashioned cure for ringworm, consisting of a copper penny dipped in vinegar, extant even to this day; but very few who used it in times past would recognize their ally in the elegant ointment of the oleate of copper, now coming so prominently before the medical profession. The legitimate successor of the "penny-vinegar" cure, the newer preparation not only combines all the essentials of the latter, presented in a neat and available form, but offers the means of effecting cures with far greater uniformity of results than has ever been obtained before, no matter what the remedy. Treatment of diseases of the skin due to the presence of a vegetable parasite has not heretofore yielded the most satisfactory results, and this has been due to several causes. First of these was the lack of a drug or preparation which could be looked upon as a *specific*, or something nearly such, and which, accordingly, could be depended upon as capable of invariably effecting a cure. Other reasons, less important, were, and are yet, not wanting to explain why success failed to crown the efforts of the therapist, but such do not fall within the scope of this paper. The oleate of copper, as already intimated, is a preparation of recent origin, being evolved even later than the popular and efficient oleates of lead, zinc, mercury (the latter of which is the only one official), etc., themselves dating back but a few years.

The form under which all of the oleates made their first appearance was as solutions of the oxide of the base desired in simple oleic acid, and the United States Pharmacopœia so directs that oleate of mercury shall be prepared. But it will not require an expert knowledge of chemistry to see that such a combination, lacking as it does a reaction, not to mention the entire absence of water, is not a salt at all, in the strict chemical sense of the term.

Instability in strength was not the least of the objections urged against these preparations, not to mention chemical changes which rendered their application inadmissible, if, indeed, not highly improper. Physicians, and dermatologists especially, need not be told of the effects of a rancid ointment.

Recognizing these and other defects, and owing to the

numerous complaints of myself and others who had made extensive use of the oleates, my friend, Dr. Wolff, became desirous of furnishing an article which would overcome objections and at the same time be *chemically pure*. To this end, then, the doctor commenced a series of experiments which finally resulted in the production of an oleate which fulfilled all the required indications. An extended description of the process of preparing the oleates in general is not pertinent here, and a condensed account of the manner in which the cupric oleate is made is alone appended:

"One part of Castile-soap (sodium oleo-palmitate) is dissolved in eight parts of water; the solution so obtained is allowed to cool and stand for twenty-four hours, when there will be a considerable deposit of sodium palmitate, while the supernatant liquor, containing mostly sodium oleate, is drawn off and then decomposed with a concentrated solution of a metallic salt (cupric sulphate), which, if obtainable, should contain no free acid to prevent the formation of free oleo-palmitic acid. The heavy deposit of oleo-palmitate so derived is strained off, pressed out in the strainer, and the adherent water evaporated in a water-bath; after this it is dissolved in about six or eight times its quantity of petroleum benzin, and the insoluble palmitate is left to subside while the solution of oleate decanted therefrom is filtered off. The benzin evaporated will yield an oleate that is entitled to that name, as it is a chemical combination and will remain stable and efficacious."*

Such, then, is the method by which a good and true oleate of copper may be produced. This product would seem to be all that is required, and, indeed, in my experience, it has answered every purpose most admirably, presenting none of the objectionable features before alluded to. Further comment would therefore seem superfluous. It may be well to remark, however, that such an oleate of copper, as well as all other oleates thus prepared, is, to all intents and purposes, a saturated solution—that is, we have in this unctuous substance the analogue of a saturated solution of potassic chlorate or other salt. Those who have noticed the directions in the Pharmacopœia for making oleate of mercury (mercury, 10 parts; oleic acid, 90 parts) will see at once what a large amount of acid is left free after the solution of the base. No such excess is observed in an oleate prepared after the process above described, and the substance is practically of *full strength*. In its application, therefore, dilution is necessary, and this is easily accomplished by the addition of cosmoline, so that the varying strengths of ung. cupri oleatis (so called)—10, 20, 30, 40, 50, or any per cent.—may be readily encompassed by the means stated. Just here it may be well to remark that the practice of speaking of a 10, 20, 30 (or greater) per cent. ointment is altogether unnecessary, and not infrequently proves embarrassing. There is no more necessity for thus designating an oleate ointment than there is for speaking of a diluted citrine ointment as being such and such a per cent., according to the amount of dilution. Thus, for example, a diluted citrine ointment of, say, the strength of *two drachms* to diluent *six drachms* would, according to

* Wolff: Paper read before the Philadelphia College of Pharmacy.

this acquired nomenclature of the oleates, be expressed as a 25-per-cent. ointment. This is easy enough so long as even numbers occur, but when fractions are necessary the system is at once faulty. It has long been a source of wonder why physicians should adhere to this useless and complicated system when a simpler method is at hand, and it gives me pleasure to refer to a recent article by Dr. Stelwagon, in which the same objection is treated of fully.* It may be added that the same objection applies in speaking of the oleates in their pristine state as being of a certain per cent., and, indeed, it was in this connection that the objection arose originally.

Having at command, then, so admirable a weapon as this preparation of copper in combating those disfiguring diseases known as the parasitic, it remains to be seen how wide is the scope of its usefulness, and how it may be used to obtain the best results.

As has already been stated, the oleate of copper is a comparatively recent addition to the family of oleates, and, had not exceptional opportunities presented themselves for experimentation, I should not feel justified in ascribing to it the decidedly curative properties that I now so freely concede to it.

I am aware that some others have not accorded it the almost specific action that I attach to it, and I can not understand why the drug has not yielded in their hands the expected results, unless it be that a sufficiently strong ointment has not been used.

The exceptional opportunities just alluded to have enabled me to observe its curative action in types of parasitic disease of the skin not, to my knowledge, heretofore treated with it; or, if they have been, certainly not to any extent. Trichophytosis, both of the head and of the body, has been the disease in which the remedy has found its greatest use heretofore, and those who have employed it here will agree with me, I think, in speaking well of it. My investigations have led me to treat no fewer than seven different forms of parasitic disease of the skin with the preparation. By this I mean practically seven different forms, although in theory they number only four, since several of them are caused by the presence of the same parasite. The scope of usefulness of the remedy, then, so far as my observation goes, is confined to practically seven diseases, viz.: *Tinea tonsurans*, *T. circinata*, *T. kerion*, *Eczema marginatum*—all caused by the same parasite; *T. sycosis*, *T. versicolor*, and *T. favosa*—each due to a separate parasite.

Prior to adopting the copper my usual course of treatment embraced the drugs usually employed by dermatologists, the results being those ordinarily obtained by others. The principal drugs used are, as is well known, mercury, in the form of either the mild or the corrosive chloride, ammonio-chloride, red oxide, yellow sulphate, or ointment of the nitrate, tincture of iodine, sulphur, tar, carbolic acid, tannic acid, and bichlorate and hyposulphite of sodium. These, being the ones oftenest employed, answered their purpose very well in my hands; but the chief difficulty was the long time required in effecting a cure if the case happened to be at all obstinate. With the advent of the copper oleate this

trouble was largely overcome, and prolonged trial has demonstrated the possibility of still further increasing its efficacy by gradations of strength. My plan of treatment is as follows: If affecting a hairy part, first of all cut off the hair close to the skin wherever a diseased patch shows itself, the clipped area extending at least one inch, and oftener one inch and a half, beyond the margin of the advancing lesion. Having done this, the parts are then anointed with oil, fluid cosmoline (petroleum), or glycerin, or a bread-and-milk poultice is applied. This for the purpose of dislodging scales or crusts if any be present. For the same purpose, when very much scurf or actual dirt is accumulated upon the parts, as is not infrequently the case, especially in public practice, I occasionally direct the parts to be thoroughly scrubbed with Castile-soap and warm water. Then an ointment of the oleate of copper, of a strength suited to the severity of the case, is prescribed and ordered to be rubbed into the diseased patches, gently but thoroughly, so as to procure as complete and rapid absorption as possible. If an exposed part, as in the case of ringworm of the head, it may be lightly covered with some appropriate material, or left bare, as the judgment and exigencies of the case dictate. The process of inunction should be repeated at least twice daily, this being usually amply sufficient. Unless an accumulation of scab-like substance should appear, it is not necessary nor even desirable that the part be washed except at infrequent intervals. No set prescription is used—that is, in relation to strength—some cases requiring but a mild application, while others call for a very strong ointment. The following prescription illustrates the average range of strength in which it is most frequently employed:

R Cupri oleatis, ʒj-vj;

Ung. petrolei, q. s. ad ʒj. M.

As will be observed, the quantity of oleate varies from one to six drachms in an ounce. In mild cases the first serves a very good purpose, fulfilling easily every indication. This, *en passant*, according to the prevailing method of designating oleates, would be a 12½-per-cent. ointment! For the severe and obstinate forms the six-drachm ointment (or even stronger) is, of course, indicated. Between these two extremes I choose a strength which the judgment indicates as being best suited to the case. Not infrequently a change for the better is observed after the second or third application, and, more especially if the case be of a mild character, often seven or eight days suffice for a cure. If, however, it is severe, a longer time is required, varying from ten days to three weeks. Exceptionally obstinate cases require even longer periods than this, but these are comparatively rare.

According to the statistics furnished by the superintendent of a charitable home for children under my charge, the shortest time required for cure was one week, which is a very fair result in consideration of the fact that the patients were not seen personally by me, but treated by the matron from my written instructions.* Less time than this has sufficed where the person treated has been under immediate supervision, for then the strength of the ointment can

* "Med. and Surg. Reporter," Phila., vol. i, No. 11, p. 824.

* All the cases in the institution referred to were of ringworm.

easily be increased if the circumstances of the case require it. As showing another result, the same report refers to another case which was under treatment for a period of upward of *six weeks*. Here the prolonged recovery is easily explainable by the ointment prescribed not being strong enough. A prescription for the ointment, containing a fixed quantity of copper oleate (the strength can not now be recalled), was sent to the home, and this was used for all cases indiscriminately. Thus the tardy recovery of a few, the more obstinate, may be easily accounted for. The same thing also occurred in another public institution, also under my charge, the patients not being seen personally but treated by letter.

The ointment is the form in which the copper oleate is used. Some months ago, however, at my suggestion, Dr. Charles L. Mitchell, of this city, who manufactures the so-called gelatin-plasters, prepared some oleate of copper in this form. The plaster thus prepared was used with signal results in a few dispensary cases, the effect being all that could be desired. The experiments were not sufficiently extended, however, to enable me to place the oleate in combination with gelatin on a plane with oleate ointment.

In preparing the following tables no inconsiderable pains have been taken to insure against inaccuracies, and, in consequence, each of the five hundred cases noted therein is believed to be absolutely correct. Up to January 1, 1884, no fewer than five hundred and twenty-three cases came under my observation; but, for purposes of convenience, the twenty-three odd cases have been eliminated as follows: Five were "lost sight of," three were so much complicated by syphilis as to render them worthless for tabular use, one was, through a mistake, not entered upon the clinic-book until long after recovery, and then only from the memory of my assistant, while the remaining fourteen have been stricken off for purposes of convenience in tabulation. With these preliminary remarks Table I is submitted:

TABLE I.

Analysis of Five Hundred Cases of Skin Disease treated with Cupric Oleate.

DISEASE.	Parasite.	PRIVATE PRACTICE.			PUBLIC PRACTICE.			Grand Totals.
		Males.	Females.	Total.	Males.	Females.	Total.	
<i>Tinea tonsurans</i>	<i>Trichophyton tonsurans.</i>	28	30	58	184	51	235	301
(" <i>kerion</i>).....		2	—	2	10	4	14	—
" <i>circinata</i>		11	9	20	65	51	116	100
" <i>cruris</i> (eczema marginatum).....		3	2	5	19	21	40	—
" <i>sycosis</i>	<i>Microporon mentaglyphica.</i>	7	1	8	16	—	16	24
" <i>versicolor</i>	<i>Microporon furfur.</i>	2	1	3	3	2	5	8
" <i>favosa</i>	<i>Achorion Schollendil.</i>	1	—	1	4	2	6	7
		54	30	84	301	115	416	500

Some months ago a medical gentleman of this city wrote me asking about my experience with the copper oleate. In response I gave him a condensed table of cases which embraced the major portion of those here tabulated, and which was, I understand, used in the preparation of a short article on oleate of copper.* Since then more cases have been added, until they have reached the present large number. The table just referred to, as compact as was then possible, has now been subjected to rigid examination and revision, and arranged in a manner more easily understood and more convenient for reference.

PRIVATE PRACTICE.

Of the total number, eighty-four were private cases, as will be seen by reference to the table, and these comprised the different diseases in about the usual per centum of occurrence. The cases of ringworm of the head were all of the usual type, some being, however, extremely severe, while the major portion were ordinarily mild. Most of them (about 75 per cent.) occurred among very young children,† the youngest being but three months old, while the oldest had reached the age of fifteen years. The average age was about seven years and a half.

The two cases of kerion occurred in adult males and presented nothing unusual. Indeed, it is questionable if these cases of kerion, either in private or public practice, ought to appear here, being so nearly allied to the preceding disease. Their presence will, however, at least serve for variety.

The twenty-three instances in which the lesions occupied the body were observed mostly in adults, the proportion being about 70 per cent. The youngest was four years of age and the oldest forty-six, the average being twenty-five years. The three cases of eczema marginatum, classed therewith, were typical ones, the lesions being quite extensive and very well marked.

Of the eight cases of barber's itch it will be noticed that one occurred in the person of a female. This subject, married, and aged forty-six years, was unfortunate enough to be the possessor of a beard of no inconsiderable growth, it being thickest upon the upper lip and the chin, and required the daily use of the razor. The hair was light in color, otherwise even the daily shaving would not have concealed her unnatural ornament; as it was, the hairs were not altogether unnoticeable. Her razor needing sharpening, her husband took it to a barber, who, after giving it the necessary edge, probably used it upon a customer suffering from the disease. The lady could not account for her condition in any other way, and the hypothesis seems very probable.

The three cases of pityriasis versicolor were unimportant, and require no mention other than that they yielded readily to treatment.

Only one case of favus was met with in private practice; nor is this at all singular when we consider what a comparatively rare disease it is in this country.

Of the entire eighty-four cases of parasitic disease oc-

* "Jour. of Cutan. and Ven. Dis.," New York, vol. i, No. 14, pp. 438, 439.

† All under twelve years of age being classed as *children*.

curing in private practice it may be seen that about 86 per cent. were caused by the *Trichophyton tonsurans*, thus showing the marked predominance of this parasite over all others; and it may be further remarked that this parasite stands in the same relation to dermatophytic diseases as eczema does to skin diseases in general.

It is proper to state, however, in the present connection, lest this very large per cent. should be understood as always obtaining, that the number of cases referable to this parasite is somewhat greater than is ordinarily seen, owing to two families under treatment having thirteen children—seven in one and six in the other. Without even these comparatively large families, the per cent., in relation to the whole number, would still be large, and about what is ordinarily seen.

PUBLIC PRACTICE.

As in private experience, ringworm, properly so called, is far more prevalent than any other disease of the epiphytic group.

In the first group it will be seen that three hundred and eighty-nine cases are classified. Of these the cases of so-called ringworm of the head presented no feature worthy of special notice in this place. The youngest person thus affected was said to be six months of age, while the oldest was sixteen years, the average age being a little over eight years. As in the preceding instances, considering all persons children who are twelve years of age or under, it was found that about 80 per cent. of the persons thus attacked were children. Fourteen cases of kerion were observed; they occurred in adults—ten in males and four in females. They were all dispensary cases. Ringworm of the body, following the general rule, was noted as occurring largely in the adult. The proportion was not, however, noticeably large, being about 68 per cent. The youngest person thus affected was aged three years and the oldest forty-one years, the average age being about twenty-two years. Of the twenty-one cases of trichophytosis cruris, nineteen were in the adult males and presented nothing unusual. The remaining two cases, however, were in the persons of adult females, a rather uncommon circumstance, since, although others may have occurred, these are the first I ever saw or heard of. I do not see why the disease should be almost exclusively confined to males; indeed, considering these two cases etiologically, there would seem good reason for its occurrence in the female as frequently as in the male, if not oftener. Both of the subjects referred to were married, aged, respectively, twenty-one and thirty years, and the mothers of several children. In both instances no attention to personal cleanliness had been paid, and this, together with markedly acid secretions from the genital regions, and, in one case (the worst one), a very acrid leucorrhœa, had been amply sufficient to originate the disease.

Sixteen instances of sycois parasitica came under observation. A few were inclined to be severe, and had been rebellious to previous treatment, but the major portion were ordinary cases. For obvious reasons, the disease occurred in adult life, hence any note of age is unnecessary.

Nothing especially worthy of mention was seen in the five cases of tinea versicolor, nor in the six cases of favus.

Of the four hundred and sixteen cases thus met with in public practice, it will be observed that no fewer than three hundred and eighty-nine, or about 93·5 per cent., were caused by the *Trichophyton tonsurans*. This exceedingly large per cent. is, at first sight, rather surprising, for the analyses and compilations of different authors show it to be about 75 or 80 per cent. The larger part of the cases herein considered were drawn from public institutions, where large bodies of children and young adults were congregated, and similar statistics of other writers will, I think, show as high a per cent. in this regard as those herein set forth.

The following table has been prepared that the relative frequency of these diseases may be better shown:

TABLE II.

Showing the Relative Frequency of each Disease and its Per Cent. in Relation to the Whole Number.

DISEASE.	Males.	Females.	Total.	Per Cent.
Tinea tonsurans (proper)	212	73	285	57
" circinata (")	76	60	136	27·2
" cruris (eczema marginatum)	22	2	24	04·8
" sycois (barber's itch)	23	1	24	04·8
" kerion (modification of T. tonsurans)	12	4	16	03·2
" versicolor	5	3	8	01·6
" favosa	5	2	7	01·4
	355	145	500	100

This table simply shows the very large preponderance of ringworm of the head over any other form of vegetable parasitic disease of the skin; and 57 per cent., as there shown, of the whole number was caused by the ravages of the *trichophyton* in that situation. While it is singular that so high a percentage of a given quantity may be reached, it is yet more singular, if not astonishing, that, when we come to estimate the total morbid lesions contained in the table, for which this parasite is responsible, we find them to be the equivalent of 92·2 per cent. ! This is enormous, and shows that, of all the various forms of vegetable parasites, the *Trichophyton tonsurans* is by far the most prevalent.

Of the four hundred and sixteen cases seen in public practice, the greater portion, as elsewhere stated, were encountered in institutions having as inmates large numbers of children.

To afford a better idea, the following arrangement has been adopted:

Three charitable institutions, containing, respectively, {	155 inmates.
64 "	
39 "	
One private day-school	41 "
Cases seen in the public and private practice of other observers (but never before published)	39 "
Dispensary service	78 "
Total	416 inmates.

The "three charitable institutions" above referred to furnished, as is evident, by far the larger number of cases. The first is, I understand, a sort of foster-home for children, situated in one of the extreme Western States, and sustained by county aid and voluntary contributions jointly. The

second is altogether a private home—private in the sense that it is supported by voluntary aid only. It is situated in a neighboring State. Regarding the third, I am, through the kindness of Miss S. M. Boufoy, the efficient matron, enabled to give as much as may be necessary. This school numbers, as above stated, thirty-nine inmates, and is situated in Greensburg, Ind.

In neither the first nor the third instance was I enabled to see the patients personally, owing to the distance; and I was therefore compelled to rely upon the accuracy of description of the respective superintendents. In both cases this was accomplished without difficulty, the diagnosis of "ringworm" being easily effected, and *proved* by the uniform recoveries resulting from treatment. The "private day-school" is located in one of the suburbs of this city, and contains, as stated, forty-one inmates. The Boards of Managers of this school and the first two charitable institutions in the foregoing classification refuse to allow any mention of their names or location, doubtless through fear that, if it became known that a contagious disease had broken out among the pupils, public aid or patronage would be suspended. Thirty-nine miscellaneous cases were seen in the public and private practice of numerous medical friends by invitation, and are, for obvious reasons, appropriately classed under the head of public practice.

Seventy-eight cases came under my personal observation in hospital practice. They comprised cases of each of the seven diseases considered herein, and showed the usual variation from the very mild to the violent type.

It should have been added in connection with the schools, both public and private, that no other parasitic disease than *tinea tonsurans* (and its congener, *tinea circinata*) was present, so far as known.

It will be noticed that I have neither made any group of *tinea tonsurans* et *circinata*, nor, thus far, made any mention of such a one; this is for the reason that such cases—of which there were, so far as I could judge personally, a moderate number—were classed off according to the part most affected. For instance, if the lesion occupied the head to a more marked degree than the body, the case was immediately grouped under "ringworm of the head," and so on. Such grouping facilitates classification and avoids any confusion.

It now remains to consider the *application* of oleate of copper upon this class of skin diseases, both therapeutically and comparatively.

Following the general plan as laid down elsewhere in this paper, the hair (when the head was affected) was cut close, the scalp thoroughly cleansed of dirt, scabs, or scales, and an ointment, composed of copper oleate and cosmoline, in a proportion appropriate to the case, applied to the parts twice daily, the whole being covered by some light material.* No variation from this plan is practiced in kerion. The same holds true in *tinea corporis*, excepting that there is, of course, no hair to cut. In consequence of the absence of hair from the affected parts, the disease in this situation is more amenable to treatment, and tends, there-

fore, to recover more rapidly, and, in the cases under consideration, this theory was amply borne out.

The cases of trichophytosis cruris, or eczema marginatum, occurring in the male, were treated with a mild ointment of oleate of copper, and in every instance with entire success. As a rule, these cases do not need a strong copper ointment; at least such has been my experience. The two females thus affected were dispensary patients, and, owing to their generally bad hygienic condition and manifest indifference to the ordinary rules of cleanliness, it is not at all surprising that they should have been thus affected. In one case, that of the younger of the two, more attention to the care of the person greatly improved the disease, in addition to which the correction of the acidity of the vaginal discharges, the exhibition of appropriate tonics internally (notably iron), and a quite mild ointment of the copper, sufficed to effect a ready cure. The other case was more obstinate, owing, in all probability, to the acidity of the profuse leucorrhœa present. Basing the ætiology of the disease in this instance upon the latter, the root of the difficulty was attacked at the outset. Examination showed quite a good deal of retroflexion of the uterus, with a considerable degree of prolapsus, together with a subacute endotrachelitis of some severity. As quickly as possible these were all relieved by the usual means, and, after the leucorrhœa had largely abated, a moderately strong copper ointment was given the patient. So well planted was the disease, however, that a much stronger ointment was required.* This had the desired effect, and the patient was finally discharged with the injunction—which had also been administered to the other sufferer—"to be more careful of herself in the future." In neither case was the extent of surface involved very large, but it occupied a somewhat irregularly shaped area upon the inner aspect of either thigh, extending somewhat beyond the line of contact of the two limbs in both the anterior and posterior direction, and, had the patches been symmetrical in outline, would have measured probably from three and a half to four and a half inches in diameter.

Of the cases of trichophytosis barbæ, only three were sufficiently obstinate to cause any difficulty, and these were promptly met with a stronger ointment. All the others yielded readily. I am inclined to think, after long trial with each, that the cupric oleate yields quicker and better results in the treatment of this disease than any other application. The social position of my bearded lady patient who contracted this malady being in the higher walks of life, and the stiffness and quantity of the beard being conspicuous, notwithstanding its light color, her situation was, indeed, a most mortifying one. After the cure of the skin disease was effected, I undertook, at her request, the radical removal of the abnormal appendage. Not having knowledge of any so-called depilatory which would remove superfluous hair permanently, I called in the aid of electricity, and, am happy to say, succeeded, by the process known as electrolysis, in removing nearly every hair from the exposed portions permanently. The sittings were numerous and, I need hardly add, tedious; but, by much bravery and persistence on the part of the patient and some patience on that

* A full description of the mode of application is given elsewhere in this article.

* Cupric oleatis, ℥vj; ung. petrolei, ℥ij. M.

of the operator, the object was at last a *fait accompli*, and the lady made happy.

All of the cases of pityriasis versicolor were mild, and yielded readily to a weak ointment. My experience with the copper in this disease is limited to a rather small number of cases, and I am, therefore, not prepared to say that the drug in this variety of skin disease is superior—at all events, not decidedly so—to the mercurial or sodium salts. All I feel sure of is that it answers a very good purpose, and in the cases treated with it the mission was accomplished as rapidly, probably, as it would have been by other means. The few cases of tinea favosa encountered presented the usual yellowish, umbilicated crusts and honey-comb appearance of the scalp. This disease, as is well known, may exist upon other parts of the body supplied with hair, but its usual seat is upon the scalp, and in none of the cases under my charge did it appear elsewhere than upon the latter situation. Most of the cases occurred in the persons of young adults. Time was when this disease was considered almost if not quite incurable, and treatment was largely given over to quackery. Schönlein's discovery of the parasite which to-day bears his name revolutionized the treatment, and, in consequence, recoveries took place under more enlightened and scientific treatment where before the sufferers were either compelled to endure the affliction for years as best they could, or else submit to the brutal method employed by the notorious Mahon Brothers—a couple of French charlatans—which consisted in applying a large pitch plaster to the scalp and afterward violently tearing it off, bringing hair, and, not infrequently, portions of the skin along with it. Sulphur or mercurial ointments, hyposulphite of sodium, and a sulphurous acid lotion, together with epilation, have heretofore been acknowledged to be the best means of attacking the enemy in his stronghold, and I must bear testimony to its efficacy. The preparation of copper used in this series of experiments has in these cases afforded some encouragement. It must be confessed that the cure was considerably longer in being effected than by the older method, and the reasons for the delay will be seen presently.

The oleate was used in varying strengths—from one drachm to six drachms to cosmoline enough to make an ounce—according to the exigencies of each particular case. From time to time, more for sake of variety, perhaps, some form of mercury, preferably the oleate (not the official preparation), was incorporated; and, indeed, this was frequently done in all the other cases as well. It may appear to some of my readers that the mercurial was the potent agent, but I reply that in every instance where it was so used the case was given ample time first to respond to the copper alone, that any such objection might be groundless.

But what of epilation? Diseases of the skin of the character under consideration have, when attacking a hairy part, had epilation largely employed as a more or less necessary adjunct to the treatment. Ringworm of the head, in the belief of many practitioners, requires that this process shall be employed almost if not quite universally, although of late years it must be said this belief is rather losing ground. While the process has been practiced largely in parasitic affections of the head, its usefulness has been far more ap-

parent in barber's itch; indeed, I may say that, by the ordinary methods of treatment, hardly a case of this disease is considered curable except epilation be employed in conjunction with the medical applications. These remarks apply equally to favus, and the first crude application of the principle is seen in the barbarous method of the French pretenders before alluded to. If I were asked to name one advantage possessed by copper oleate over all others, I should unhesitatingly say it *obviates the necessity of epilation*. My experience with it (the oleate) has satisfied me that epilation under its use is *rarely necessary*.

In treating ringworm of the head with copper oleate I have never yet had to perform epilation except when the lesions involved the eyelashes; here there is no help for it, as the oleate has an unfortunate tendency to attack the conjunctiva, and, when brought in contact with it, may even set up a smart inflammatory action therein. In such cases I explain the situation to the patient or his friends, and, having thus secured as much intelligent co-operation as possible, I remove a few of the lashes and persist in the application of the ointment, making the latter, however, as weak as circumstances will consistently allow, meanwhile keeping a close watch upon the eyes. Coming in contact with the eyeball produces smarting, which is, of course, increased in direct proportion to the strength of the ointment.

The modification of tinea tonsurans known as kerion does not require epilation any more than ringworm of the head proper.

In tinea sycosis epilation is more frequently necessary than in tinea tonsurans, but even here it is practically uncommon.

Favus may, like the other parasitic diseases attacking a hairy part, be cured without epilation. I am convinced that recovery may take place much more quickly if epilation be practiced in conjunction with the copper ointment. Without it, owing to the hairs being allowed to remain *in situ*, the cure is longer in being effected. Loose hairs, or those which are thoroughly dead, drop out, or may be easily and painlessly removed. By the penetrating quality of the remedy the seat of disease is reached, the plant itself destroyed within its very bed, the partially good hairs or those but just beginning to be involved in the morbid process are saved, and the patient spared much suffering from their forcible removal.

To sum up, then, I may state that, while epilation may be, and undoubtedly is, necessary in what may be denominated isolated cases, yet I do not think I use too strong language in saying that *epilation is rarely necessary in parasitic diseases where copper oleate is used*.

The comparative length of time required to effect a cure is variable. Ringworm of the head and body is eradicated in from a few days to two weeks more quickly by the copper treatment than by the old procedure; barber's itch is relieved more promptly and decidedly than under the former plan; pityriasis versicolor is affected as readily as by other means, although, as before mentioned, the number of cases experimented with was not sufficiently large nor interesting upon which to base an absolute opinion. Lastly, in favus the cure is retarded if epilation is not used. This is

the only disease of this nature in which the remedy has not produced a more rapid cure than other drugs. But I need not point out, as counterbalancing this, the preservation of partially good hairs and the suffering avoided; the facts are self-evident. Using the five hundred cases as a basis, I think better and quicker results—speaking in general terms—are obtainable by the copper treatment of the parasitic diseases than by any other plan. No better evidence of its permanency is afforded than that every case enumerated in the foregoing table was relieved *entirely*, not a single relapse having come to my knowledge.

In almost all cases of disease of the skin, be it parasitic or not, the patient is physically below par, the general appearance as well as the system at large bearing evidence of the bad state of health which has originated the trouble (as it undoubtedly may do sometimes), or, if not this, predisposed to it. Manifestly, then, tonics appropriate to each case are imperatively called for; and he is a very poor dermatologist, as well as a conspicuously unsuccessful one, who ignores the influence of the economy at large upon diseases of the skin, and who, consequently, fails to afford the necessary assistance in maintaining a proper standard. Hebra, the exponent of the Vienna school, was an exception to this, for, while denying almost *in toto* any connection between the skin and the general system or special organs, he nevertheless demonstrated, during his brilliant career, a wonderful degree of success and skill in coping with this obstinate class of diseases. The proper supporting and reparative measures must vary, of course, with the exigencies of the case. Iron, quinine, and the bitter tonics generally are usually appropriate, and they should, moreover, be made up in as pleasant and palatable a form as possible. With the constant improvements going on in the domain of practical pharmacy, there are few drugs now in use that can not be made into a form both elegant and acceptable for internal administration. "Pleasant medicine" is more especially necessary in the case of children, for obvious reasons.

In my response to the letter of inquiry before mentioned, referring to the formation of furuncles, I said that I had "never observed any untoward effect, furunculosis or otherwise." I wish now to amend that statement by saying that, since writing the doctor to that effect, I have observed, in a limited number of cases, a tendency to the formation of furuncles of the variety usually known as "blind." The cases were not at all numerous, however—probably not exceeding six or seven, so far as known. It must be borne in mind that most of the cases here reported were not seen personally; but so very full and explicit were the several matrons or superintendents of the institutions in their letters to me that, had such symptoms as these arisen, they would have been sure to report them. Not to ignore even a slight point in the investigation of this remedy, I may add that in those instances in which furunculosis swellings did occur they developed after the application of the very strong ointment; but—and this is an interesting point—in many, if not all, the persons affected (with the swellings) there existed a more or less well-marked tendency to a strumous diathesis. In consequence of this significant fact, the question has suggested itself to

me whether the swellings would not have occurred with the application of any other remedy; if, indeed, they would not have presented themselves any way sooner or later through the aggravating influence of the morbid dermal state.

From one of the public institutions one case of boils was reported, and this is the sole case of the kind which I have ever known to reach suppuration. The case was, I believe, decided not to be one of ringworm, although it had been so classified in the beginning.* The patient's head presented the usual dry, scaly appearance so common to some stages of the disease, together with some falling of the hair, etc. In this case the application of the oleate occasioned the boils mentioned, "with a head or cap to each. On being opened, a core, like a little grub in appearance, was ejected, leaving a hole in the scalp. These little ulcers, or whatever they are, continue to reappear, and the head is much inflamed and feverish. The poulticing and vaseline have reduced the inflammation somewhat, however, and we have decided that the oleate shall be discontinued, the disease evidently not being ringworm." (Sarah M. Bonfoy.)

In concluding this paper it may be well to remark that unusual facilities have been accorded me for experimenting with the preparation in question. It is not often that the professional man meets with so large a number of special cases, and, lest a doubt might be entertained of the entire accuracy of the report, I hesitated long before committing the result of my observations to print. I have endeavored, and, I think, with entire success, to guard against any mistake or unfortunate statement.

The accumulation of data for such a paper as the present one, with the time and patience involved, has been, as may readily be supposed, a matter of some labor, and the author earnestly hopes that its presentation under this dress may not be without value from a therapeutical point of view.

ON THE PREVENTION AND TREATMENT OF PUERPERAL FEVER

FROM AN ETIOLOGICAL STANDPOINT.

By W. D. SCHUYLER, M. D.

(Continued from Vol. XXXIX, p. 605.)

ETIOLOGY OF PUERPERAL FEVER.

II. Concerning the degree of prevention which should be attempted against an attack of puerperal fever, we must be guided in our judgment by the likelihood of its occurrence, which, again, must be referred to the etiology of that malady. As more fully setting forth his views of its causation, Dr. Thomas refers to the report of the Berlin Obstetrical Society, whose committee, in 1877, as quoted by him, promulgated the following: "Under the names 'puerperal fever' and 'malignant childbed fever' are included a group of diseases occurring in childbed which vary greatly in their manifestations, but have this in common, that they are called into being by the absorption from the organs of generation of a material which gives rise to destructive

* A dispensary case has been placed to the credit of the institution referred to in the place of this case, so as to preserve intact the number of cases set opposite the school.

inflammation and fever. There are indeed a number of substances, mainly composed of organic materials in a state of putrid decomposition, which, when brought into contact with an open wound, set up inflammation in it, which extends to the neighboring tissues. *Puerperal fever is indeed nothing else than the infecting of fresh wounds, such as are found in every newly delivered woman, with these septic materials.*" (Italics mine.) "Thus every newly delivered woman is liable to suffer from the dreaded infective-wound diseases, which, in persons wounded under other circumstances, are called pyæmia, septicæmia, wound fever, blood-poisoning, purulent infection, etc., as soon as suitable septic materials are brought into contact with the genital organs." The manifest interpretation of the language of this report adopted by Dr. Thomas is very simple and direct. According to it, *puerperal fever*, including by this title a group of diseases occurring in childbed, *is called into being by absorption through the wounded generative tract of a septic material, mainly composed of organic matter in a state of putridity,*" and "*is indeed nothing else than the infecting of fresh wounds with these septic materials.*" And with regard to the nomenclature of this malady, "known under the name of puerperal fever, child-bed fever, lying-in fever, and under the titles of the various special affections which develop in its course—phlebitis, lymphangitis, etc."—Dr. Thomas would suggest, as conveying "to the student and to the practitioner a clear idea, in consonance with the teachings of modern pathology, the term 'puerperal septicæmia,'" which is a further declaration, from another point of view, in perfect harmony with his statement previously referred to, that "puerperal fever is puerperal septicæmia."

In the opinion of the writer, the steps and course of the pathological development, as set forth in the Berlin society's report, correspond exactly with the pathogenesis of puerperal septicæmia. And, if we recognize no other than an idiopathic form of puerperal fever, if we deny that there is another, a semi-specific, contagious variety of the puerperal febrile disease, then we can not object to calling "puerperal fever" "puerperal septicæmia."

But that that form of the puerperal febrile disease met with mostly in hospital obstetric services, in the lying-in wards of general hospitals, is nothing else than the infecting of freshly made wounds by the putrid decomposition of the products of gestation only, I am unwilling to admit. Lacerations result much too frequently that are not followed by puerperal fever to justify us in concluding that in such a pathogenesis—otherwise uninfluenced—resides its essential cause. The rule is that almost every woman who performs the parturient act is somewhat lacerated, and yet not in my private experience has that form of puerperal fever met with in hospital lying-in wards, which develops a propagating contagium, resulted once from this cause. Again, that hospital "puerperal fever" and "malignant childbed fever" have it in common that they are called into being by the absorption from the organs of generation of a material which is (simply, not otherwise impressed) only in a state of putridity—in view of the many cases in which the lochia are offensively putrid and no such contagious inflammatory fever results—is not to be accepted in the light of all observed facts.

From a consideration of all the evidence of experience, and because such a deduction is not impossible, it is reasonable to conclude that there are at least, ætiologically speaking, and therefore essentially, two forms of puerperal febrile disease, both of which result from the reception into the system of a poison through the generative tract; and that one arises from a *materies morbi* which is a sepsis *idiopathically generated*, and may be appropriately called "*puerperal septicæmia*," while the *materies morbi* of the other is a specifically developed contagium, a *special malaria*, a *heterogenic* principle, and the fever it sets up may be, categorically at least, designated "*puerperal fever*."

It is quite likely that the genesis of both of these forms of fever—concerning the existence of which much evidence might be offered—may arise out of more than one set of predisposing causes; that the contagious principle of *puerperal fever* may be developed from nosocomial lying-in emanations, and exist from and in epidemic and endemic states and influences; while the sepsis capable of exciting *puerperal septicæmia* (idiopathic puerperal fever) may result from inoculation, from general or special idiopathic conditions, from decomposing placenta or secundines, or from putrid lochia.

Again, it is quite likely that for each of these general forms there may be sub-varieties, that in puerperal fever (contagious) we may have a catarrhal or diphtheritic specific action setting up vulvitis, vaginitis, metritis, etc., while in puerperal septicæmia there may or may not be endometritis, phlebitis, lymphangitis, emboli, multiple abscess, etc.

However, it is not the purpose of this article to go further into the morbid anatomy of these affections than is necessary to elucidate a distinct ætiological character for the two main classes as set forth.

But, if it is not yet sufficiently shown that the puerperal woman is subject, in the puerperal febrile maladies, to two essentially different diseases, then, as more conclusively establishing that fact, as more clearly exhibiting the action and its limitation of the poison of contagious puerperal fever, as establishing for this poison a specific principle, which attacks the woman from without, and as showing that the destruction of this contagium, or its exclusion from the mucous membrane of the genital tract, prevents the development of this fever in her, notwithstanding, as a result of the parturient act, local inflammations from lacerations and bruising have occurred, and as inferentially, but with equal force, arguing an entirely different ætiology for puerperal septicæmia (idiopathic puerperal fever), I would recall attention to the admirable work, and its most significant results, done by Dr. Henry J. Garrigues, at the New York Maternity Hospital, as set forth by him in a paper, entitled "Prevention of Puerperal Infection," published in the New York "Medical Record" of December 29, 1883.

For the purpose of better appreciating the results attained by Dr. Garrigues, and for the benefit of those who do not know already, it is well to state that the "New York Maternity Hospital does not exist at all except in so far that it has a medical board of its own, being in other respects only a department of Charity Hospital," consisting of three large wards and one small ward and a delivery-

room, set apart in that institution, a large general hospital in which all diseases, medical and surgical, are treated.

As set forth in that paper, the aggregate number of women confined in that institution from the beginning of the year 1875 to the close of the year 1882 was 3,027, with an aggregate number of 116 deaths, the percentages of death for the different years varying, being 2·67 for 1875, when it was lowest, and 6·67 for 1877, when it was highest.

During the first nine months of the year 1883, 345 women were delivered, of whom 30 died, 11 of these deaths occurring in Dr. Garrigues's service. The doctor states, also, that during his six months of service in 1882, or from October 1, 1882, to March 31, 1883, 192 women were delivered, of whom 46, or 1 in 4, were seriously sick, and 39, or almost 1 in 5, of inflammatory puerperal diseases.

When he went on duty, October 1, 1882, he says: "The condition of the hospital was at its worst, nine women having died during the last month, and half a dozen seriously sick puerperæ being left over, one of whom succumbed a few days later."

With this history of the service to consider, with the results of his own experience in the institution since his connection with it in his mind, and with the immediate not promising but "worst" prospect before him, the doctor began the service referred to by instituting a thoroughly antiseptic condition for his wards and all the necessary appurtenances they contained, and an antiseptic regimen for the service as regarded himself, his assistants, and nurses.

The results of the measures put into force are best given in the doctor's own language. He says: "The effects of the described treatment have been wonderful. As by magic all trouble disappeared. Ninety-seven women have been delivered since its introduction, and not only have *none of them died*, but there has *scarcely been any disease* among them, and especially no trace of diphtheritic inflammation, by which we used to be so persecuted. Up to this day we have had only six sick women; two had local perimetritic inflammation, three had metritis, and one had eclampsia. None of them, with the exception of the latter, have been seriously ill, and yet we have had two cases of podalic version and a craniotomy. Of the six patients, three only had a rise of temperature; the eclampsia case had none, and two of the patients with inflammation had none; and yet the presence of inflammation was sure enough proved by the symptoms—spontaneous pain, sensitiveness to pressure, and exudation. This *lack of fever* (italics mine) I can only explain by the perfectly aseptic condition in which the genitals were kept by the dressing, and in this respect it seems that our results are better than those observed elsewhere."

While for the details of the measures taken I shall refer the reader to Dr. Garrigues's paper (*l. c.*), yet I may say of them here that they included the strictest antiseptic precautions for each labor as it occurred in its turn. The special precautions taken and measures adopted—besides securing disinfection of the rooms, medical staff, nurses, and all instruments and utensils used—were (1) the use of intra-vaginal injections before and during labor; (2) the applica-

tion of a "pad," or an external antiseptic dressing for the genitals after labor; and (3), although not generally practiced, yet where the fingers or hand had been introduced into the womb, or instruments had been employed, prophylactic intra-uterine injections.

The external protective dressing for the genitals was renewed three times daily, or oftener as needed, the object being to guard the generative tract, at its orifice, against the entrance of an infecting poison, and also to prevent an attack of the poison at the orifice itself.

All instruments used, and cottons and lint employed, were also rendered aseptic by soaking or washings.

The results attained by these measures in their bearing upon the questions herein considered, as to the nature and ætiology of puerperal fever, are of marked significance.

While, however, it is not strictly relevant to the main questions herein considered to inquire to which of the measures employed by Dr. Garrigues the credit of the results attained should be given, or to determine whether they were due to the frequent emptying and fumigating of the wards which was practiced, to the strict antiseptic regimen which was enforced, to the intra-vaginal injections given preceding and during labor, or to the external genital dressing, yet, that we may not hereafter unwarrantably or unduly estimate either procedure, and thus be led to place too great reliance upon it, we may briefly, perhaps profitably, consider such inquiry.

There are strong reasons for thinking that to the repeated emptying of the wards, *their fumigation, antiseptic scrubbing, and subsequent exposure to the open air day and night for a varying time*, rather than to any other or all other measures, those results were due.

The efficacy of a thorough fumigation of a ward with burning sulphur, afterward allowing it to stand empty, with the windows open day and night for several days, as a preventive of puerperal fever, has been repeatedly shown—I may say proved—at Bellevue Hospital, both in its old lying-in wards in the north wing, and, more recently, in the Emergency Lying-in Hospital, a building connected with that hospital and attended by its regular house staff, although situated a block away in Twenty-sixth Street.

Such fumigation is not only deemed an *efficient protection* against subsequently occurring puerperal fever for a varying but for a *considerable* time by the members of the house staff, but is so considered by one of the visiting staff, who told me that, if over-crowding were not practiced—especially in the Emergency Lying-in Hospital—and if no puerperal fever case were admitted there, bringing contagion from without, the disease, subsequent to fumigation, would probably not reappear. On the other hand, he said, if over-crowding is compelled and practiced, then, in time, malarial troubles arise, fever occurs, and finally puerperal fever (contagious and peritoneal) is developed.

This statement, based upon observations most favorable for an inductive judgment, aside from its importance in regard to the *efficiency of fumigations as a preventive measure*—which is strongly affirmed—is *very interesting as showing the possible steps in the pathogeny of the puerperal fever, contagious*.

The value of the measure adopted second in order by Dr. Garrigues—of rendering the persons of the medical attendants, the nurses, and of others who might have duties therein, aseptic, on every occasion whenever they are to enter the lying-in wards or approach the parturient woman, as a means of prevention—can not in and by itself be properly estimated in a ward which has been fumigated, as, if the single measure of fumigation destroys the poison, and the doctor, or nurses, or others, who may get entrance to the wards, have not been exposed to other sources of puerperal fever contagion, they will not have the poison about them to communicate, and therefore aseptic preparation experimentally demonstrates nothing. But that the measure is not essential where fumigation has been carried out is evident by reference, again, to the service at the Bellevue Emergency Lying-in Hospital, where the house physician in charge passes from his general service in Bellevue to his obstetric service in the Emergency, without making the least aseptic preparation; and yet it is evident that puerperal fever is not generated by such neglect.

The value of the third measure—intra-vaginal injections before and during labor, declared by Dr. Garrigues, in a paper published in the March 1st number of this "Journal," as forming "a link of absolute necessity in antiseptic midwifery"—is equally far from being fully determined. As used, its merits can not be said to have been tested any more than the measure, just examined, of personal antiseptis. General experience teaches that the measure is unnecessary where infection is not endemically present, therefore it is probably quite as unnecessary where fumigation has been employed previously.

Until further evidence is adduced showing its value, Dr. Garrigues's claim for it—as a measure of necessity in antiseptic midwifery—is merely hypothetical.

As to the part accomplished by the external dressing for the genitals: While it fulfills a reasonable indication, and may be most valuable, yet the test as yet made of such value has, so far as I know, not been crucial or decisive. Had this dressing been used in the wards of Maternity prior to fumigation, and attended by the same results, or by like results, as those recorded by Dr. Garrigues, then no doubt could have been entertained as to its value. As it is, however, our judgment of it as a safe preventive measure must remain, for the time, uncertain.

While, therefore, fumigation and ventilation may be resorted to in rooms or wards where the puerperal fever contagium is endemic from previous propagation and occupancy, and is so limited, with confidence that such procedure will prevent further infection, yet that either one or all of the other measures practiced by Dr. Garrigues will, of themselves, accomplish the same result, is at least uncertain; and reliance upon them would be most hazardous.

Where, however, the contagium of this malady is epidemic, due to a state of generally existing malaria of a specific character—if possibly it may so exist in a more extended locality—then two preventive indications are presented: (1) To destroy the poison in the room to be occupied for the lying-in—which may be easily met by fumigation; and (2) to prevent subsequent infection from the sur-

rounding atmosphere—which may be met with the external genital dressing, as recommended.

However, to return to Dr. Garrigues's experiment and its results. The fact of importance relative to the trial he made is that, under most favorable circumstances for its continuance, the fever was stamped out; and that this result was due to the measures instituted we may conclude from its permanency. Writing two months later—a paper published in this "Journal" March 1, 1884—Dr. Garrigues says: "This method . . . has now been used in one hundred and seventy-five confinements in Maternity Hospital, and in the same wards where we used to have constant trouble everything goes smoothly."

By the method practiced, the generating morbid element, the cause of infection and fever, had been destroyed or excluded from the woman (whether destroyed or excluded, or both, does not signify in this connection), and no fever occurred. Hence, puerperal fever being prevented, not being a possible occurrence under these circumstances, such result proves conclusively its exopathic origin, or that its special infection comes to the woman from without. Furthermore, as inflammatory conditions did occur in the generative tract in those cases, notwithstanding puerperal fever did not result, we may conclude that *the pathogenesis of this fever is independent of local inflammatory aids*; and, as it is quite probable that in these one hundred and seventy-five puerperæ there were the usual number and extent of lacerations and the average condition of lochia, we may further conclude that such pathogenesis progresses or develops, when it occurs, independently of these states.

Lastly, from the fact that puerperal fever generates a contagium which propagates its like indefinitely, and until destroyed, we may conclude it possesses specific qualities.

Further conclusions to be drawn from the study and observations of puerperal fever before and after aseptic precautions in Maternity Hospital verify previous deductions already set forth: (1) That its contagium is endemic, and may so persist; (2) that where it is endemic in a confined habitat it may be destroyed or rendered harmless; (3) that it is not generated idiopathically, is not essentially inherent in the individual puerperæ's state; that neither in the fibrinous condition of the blood, the post-parturient condition of the endometrium, the hypertrophic state of the histological elements of the womb, neither in conditions of the lochia, nor in all these conditions combined, of themselves, is there the adequate element to generate that malady. Furthermore, that study with its inductions demonstrates that puerperal fever does not result from simple absorption of the uterine contents—"of organic materials in a state of putrid decomposition, which, when brought into contact with an open wound, set up inflammation in it"—and also negatives the teaching that "puerperal fever is *indeed nothing else* than the infection of fresh wounds, *such as are found in every newly delivered woman*, with septic material."

Also, from the character of the (inflammatory) processes which were present in the cases of puerperal fever which occurred in Maternity Hospital prior to the antiseptic regimen—*catarrhal* and *diphtheritic* vulvitis, colpitis, and metritis—and their absence subsequently, we are forced to the

conclusion that infection by that malady travels through the mucous membrane of the generative tract, gaining an entrance at its outlet.

Again, from the fact that puerperal fever continued by repeated outbreaks, or in intermittent severity, in Maternity Hospital from the time that institution was opened to the date of Dr. Garrigues's aseptic trial, from the fact of its many reappearances in the lying-in wards of Bellevue Hospital until they were discontinued on that account, and from the fact of its occurrence in Emergency Hospital, we may conclude that the disease can be developed *de novo*, as already pointed out, in (an overcrowded) hospital lying-in atmosphere.

But whether it may be generated in a general hospital from such malaria as therein exists, nosocomial, arising from general emanations, from surgical erysipelas, and from cadaveric emanations, where there is no overcrowding of puerperæ, and only an occasional confinement case, so that a single woman confined in such hospital shall be endangered by it—while such genesis is not fully shown by any evidence known to the writer, yet it is a possible, and may be a probable, occurrence.

Having established a specific or semi-specific malarial character for the poison of puerperal fever, we must thereby recognize a limit of the genesis of the malady to such specific cause; hence a result occurring from a different cause, although its pathological ensemble is almost identically similar, can not be held to be the same. On the other hand, upon this ground of deduction, as well as from the facts, namely, that it is idiopathic, is not contagious, is never endemic, and is not necessarily initiated by an inflammatory, catarrhal, or diphtheritic action, we may conclude that puerperal septicæmia is not identical with, but is distinct from, puerperal fever.

This conclusion, however, does not preclude the possibility of the two morbid conditions and actions being present in any one and the same case. Contagious puerperal fever may take on a septicæmic or putrid complication; and a case of puerperal septicæmia is equally susceptible, from exposure to the necessary infection, to puerperal fever; and that the two diseases do concur in hospital lying-in cases is most likely.

What it is that imparts a specific character to the poison of puerperal fever—what constitutes the essence of such malaria, on the one hand, or what it is that determines a retained placenta, clots, secundines, or the lochia, under certain conditions and at times, to take on septic action, on the other, are interesting questions for study; but, from data at present available, they are not capable of a perfectly satisfactory solution.

Whether, as some hold, bacterial forms which gain a footing in the puerpera comprise the specific essential in either case is, so far, problematical.

While we can theoretically account for the occurrence both of contagious puerperal fever by ascribing it to one form of bacteria, and of puerperal septicæmia by ascribing it to another, yet, for the purposes of prevention, I do not see that anything is gained by such hypothesis. And the bacterial forms that have been found may, so far as clinical

results are concerned, and quite as well, be regarded as consequences rather than causes.

The general inferences from the foregoing are: 1. *That puerperal fever and puerperal septicæmia are essentially two distinct diseases.* 2. *That they both arise from blood poisoning through the predisposed generative tract, but the poisons which generate them are not the same.* 3. *That the puerperal woman in private practice is not especially liable to contract puerperal septicæmia, and that she only contracts puerperal fever from a specific malarial contagium.*

(To be continued.)

A CASE OF

ECCHONDROSIS OF THE LARYNX.*

By MORRIS J. ASCH, M.D.

CARTILAGINOUS tumors of the larynx are of such infrequent occurrence that possibly the report of a case may not prove uninteresting. There are very few cases of the kind on record. Froriep described a case of chondroma of the larynx where three large, partly ossified tumors sprang from the thyroid cartilage and considerably narrowed the laryngeal cavity.† He also cites a case from McIlwain, "Edin. Med. and Surg. Journal," 1831, which, however, is doubtful as to the diagnosis. Virchow describes rounded excrescences, springing from the cricoid, which become more and more pointed, and one case where the tumor arose from the anterior inner surface of the thyroid; here the excrescence was ossified, and formed a true exostosis, under which the mother cartilage was preserved intact. (Virchow, "Path. des tumeurs," vol. i, p. 442, Traduc. Ahronson.) The case of bronchial stenosis, the result of ecchondroma, reported by Gerhardt ("Jen. Zeitschrift für Med. u. Stat.," Band iii) can scarcely be considered a case of laryngeal growth. Mackenzie reports a case where a cartilaginous tumor, arising from the cricoid cartilage, extended downward in front of the trachea (Mackenzie on "Growths in the Larynx," p. 54). Musser (Path. Soc. of Phila., in "Phila. Med. Times," May 6, 1882) reports a case of ecchondroma of the larynx where a tumor of the size of a walnut grew from the posterior surface of the cricoid cartilage into the lumen of the larynx. The diagnosis here was made after death, the patient having died of pneumonia following tracheotomy. No microscopical examination is given in the report.

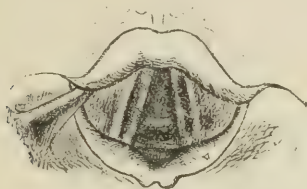
I find, however, but two cases reported where cartilaginous tumors of the larynx were diagnosed as such and treated during the lifetime of the patient. One case is recorded by Ehrendorfer ("Wiener med. Woch.," July 2, 1881), where the tumor grew from the back of the thyroid cartilage and made its way into the larynx by passing between the arytenoid cartilages. It was removed by Billroth by external incision, the nature of the growth having been ascertained by the removal of a piece during the operation of tracheotomy. The other case, the only one reported where the affection was treated by the endolaryngeal method, occurred in the practice of Stoerk ("Klinik der Krankheiten

* Read before the American Laryngological Association, May 13, 1884.

† R. Froriep, "Preuss. Vereinszeitung," 1834, No. 38.

des Kehlkopfes," p. 417), where the tumor sprang from the arytenoid cartilage. Particular interest attaches to such tumors from the fact that Virchow states (*op. cit.*) that, from their thickness and hardness, they can not be removed *per vias naturales*.

R. C., aged forty-two, presented himself to me a few months ago, complaining of constant irritation of the throat, attended by frequent hoarseness. He was an amateur vocalist of considerable merit, and insisted that there was something in his throat which prevented a complete development of his vocal powers. He had been under treatment for chronic laryngitis for a long time without result. A laryngoscopic examination showed a curious growth springing from the inner surface of the thyroid cartilage, apparently at the base of the superior cornu of the right side. It projected anteriorly and inward toward the base of the epiglottis for about five sixteenths of an inch. It was conical in shape, and covered by mucous membrane, which it pushed before it in a tent-like manner, and which, during certain movements of the throat, rose over the growth, com-



pletely hiding it. I had never seen such a growth, and was puzzled at first to make out its nature. Frequent examination, and touching it with the finger as well as the sound, convinced me, however, that I had to do with an echondrosis—a cartilaginous tumor springing from cartilage, as distinguished from an enchondroma where the cartilaginous tumor originates from bone or any substance other than cartilage (Virchow and Cornil and Ranvier)—in which opinion Dr. A. H. Smith, who saw the case in consultation, agreed. At first I was in doubt whether to attempt its removal by the endolaryngeal method, or by external incision, being influenced by Virchow's statement as to the hardness of these tumors, and I had not at the time read Stoerk's account of his case. However, as the tumor seemed to afford an excellent opportunity for attempting its removal by the mouth, and as the patient was exceedingly anxious to be rid of it, I determined upon this operation. The shape of the tumor indicated the guillotine as the instrument to be preferred. I accordingly had a very strong and sharp one made after Stoerk's pattern, having the ring of steel with a cutting edge on its upper border, the stem being bent to the left, so as to give greater facility in viewing and manipulating the growth. On the 15th of April last the patient presented himself for the operation, which I performed, assisted by Dr. C. H. Knight. At first it was extremely difficult to include the growth in the ring of the instrument. The patient was brave but nervous, and his larynx was in constant motion. On every attempt to seize the tumor the movable mucous membrane would rise and completely cover it, and it was only during phonation of certain sounds that I was able to see it satisfactorily. In making an attempt at section, I cut off a piece of the mucous membrane at its apex; through this the growth protruded, and at the next attempt the instrument encircled it to its base and the removal was effected without difficulty. There was no hemorrhage. There was a little pain in swallowing

for a few days, after which the throat was perfectly normal. The voice has improved, according to the patient's statement, to the extent of adding two notes to his register, which, I need scarcely say, affords him great satisfaction.

A microscopic examination was made by Dr. G. L. Peabody, Pathologist to the New York Hospital, who reports as follows, after examining several sections without finding any ossification:

Each of these sections consists of cartilage at its center, in many cases well preserved. There are large lumps of blood-pigment in the matrix, in the capsules, and occasionally in the cartilage-cells. Some of the sections show the "asbestos" degeneration of the matrix, and the further change of cells, etc., into lumps of calcareous material, into which carbonate of lime enters largely. By adding sulphuric acid I have decomposed this carbonate, and seen under the microscope the evolution of carbonic-acid gas in two sections. These forms of degeneration take place physiologically in the costal cartilages, and doubtless elsewhere, in advanced life.

Thus, gentlemen, I have described a case of cartilaginous tumor of the larynx undergoing calcareous degeneration—a case interesting for its rarity, and valuable as being a proof that such tumors come fairly within the province of the laryngoscopist, not merely for diagnosis, but for their cure by endolaryngeal methods.

DISCUSSION.

Dr. COHEN.—I have never seen a similar case, and but two or three specimens of echondrosis of the larynx are to be seen in the museums in Europe. With regard to recurrent laryngitis, there are some cases in which it is due to the influence of a growth outside of the larynx proper. It is somewhat peculiar that the removal of the tumor in Dr. Asch's case should have had the effect of increasing the resonant powers of the voice in so marked a degree.

Dr. SEILER suggested the explanation that the tumor had interfered with the resonant cavity above the vocal bands. It was not probable that the tumor could so interfere with the bands as to make a difference of two notes in the scale.

Dr. LANGMAID.—I think the reason for the increase in the vocal resonance very problematical. It seems strange, as Dr. Cohen has suggested, that anything outside of the muscular apparatus should interfere with the tone, or that its removal should increase the scale. It is possible that the so-called moral effect of removal of the obstacle may have had something to do with encouraging the voice to act. I should not like to deny Dr. Seiler's proposition, but should rather think the two facts combined—namely, the removal of the laryngeal irritation, and the moral encouragement given by removal of the obstacle—would account for the increase in the scale.

Dr. ASCH was inclined to accept Dr. Langmaid's explanation of the change in the voice.

The Health of Paris.—According to the statement made by the Director-General of Public Assistance at Paris, no cases of true cholera have been observed in hospital, although diarrhoea is frequent enough. Some fatal cases of cholera nostras have occurred in the town, but, as they are really limited, and do not spread, they may be referred to the ordinary state of public health during the summer months in Paris. It is well-known, of course, that every year, in July and August, some cases of sporadic cholera break out in this city.—*Medical Times and Gazette*.

CAN LOCOMOTOR ATAXIA BE CURED?*

By GRÆME M. HAMMOND, M.D.,

LECTURER ON ELECTRO-THERAPEUTICS AT THE POST-GRADUATE MEDICAL SCHOOL.

A FEW years ago, when a member of the medical profession announced that he had cured a case of locomotor ataxia, his statement was not received with a great amount of interest. Belief in his views was not entertained for a moment. It was absurd even to talk about curing ataxia, and it was thought that the physician had made an incorrect diagnosis, or else that an intermission of the disease had occurred at an opportune moment. The pathological condition found existing in the spinal cord in persons who died while suffering from this disease seemed to warrant the views held by the majority of physicians that a cure of ataxia and all similar affections, such as the sclerosis of the different parts of the cord and brain, was an impossibility; but, as time has passed, reports of cases cured have come before the profession, many of them reported by men of such undoubted learning and high reputation that we can not afford to overlook them. The question, therefore, that arises is, Are these true cases of ataxia, or is there some other morbid condition of the spinal cord which, when present, gives rise to symptoms similar in every respect to those resulting from sclerosis of the posterior columns? I have been enabled to collect a few cases of undoubted cure of what was supposed to be locomotor ataxia, and I think their histories, and the different methods of treatment employed, go far to settle the question of the curability of posterior spinal sclerosis.

CASE I.—The patient, whom I am fortunately able to present before you for the second time, was the subject of a short paper read before this society last June. I then exhibited him as a case of locomotor ataxia cured, and, I am happy to say, the cure has so far stood the test of time.

His history is as follows: Ten years ago he came under the observation of Dr. James Anderson, of this city, for a lesion of the glans penis. Dr. Anderson is unable to say at this date whether it was a chancre or a chancroid. No secondary symptoms were ever apparent. He has two children, both of whom are perfectly healthy. He had been a drinker for several years, seldom going on a spree or becoming intoxicated, but taking a good many drinks every day. In the winter of 1882 he went on a spree, which culminated in an attack of delirium tremens. Following this attack, the prominent symptoms of ataxia appeared, though for the previous six months he had complained of sharp, shooting pains in the legs, and slight difficulty in walking. He was now unable to stand without support. When assisted, his walk was characteristic of ataxia; there was a loss of the tendon reflex, a difficulty in retaining the urine, and anæsthesia of the lower limbs. The arms were somewhat affected, and there was partial loss of sight.

Dr. Anderson prescribed iodide of potassium and bichloride of mercury, and referred him to me for further treatment. I applied the actual cautery several times to the spine, together with dry cups, the ether spray, and static and galvanic electricity. From this time the patient began to improve, and, when I exhibited him before you one year ago, he was apparently per-

fectly well. He walked correctly, could stand with his eyes closed, and jump on and off a car while it was in motion. The tendon reflex returned. On this latter point he was tested by several members of the society. He has had no treatment whatever since then. He takes no wine or liquor in any form. He is stouter, and seems to be in better condition now than he has been any time for several years. During the past winter he frequently ran over the ice and snow, drawing one of his children on a sled—a feat which any person afflicted with ataxia would find it impossible to accomplish.

CASE II.—Desplat (of Lille), in "*L'Union médicale*," Nov. 29, 1883, reports the case of a man, fifty-four years of age, who had contracted syphilis twenty years previously. For the past five years he had shown symptoms of locomotor ataxia—such as plantar anæsthesia, loss of the idea of the exact position of the limbs, partial anæsthesia of the upper limbs, absence of the tendon reflex, and incoordination. He was treated with Gibert's syrup and mercurial frictions. In five days an amelioration of the symptoms was observed, and in five months the cure was complete.

CASE III.—A gentleman from Peekskill, N. Y., consulted Dr. William A. Hammond about two years ago. He exhibited all the symptoms of locomotor ataxia. He was unable to stand with the eyes closed; the tendon reflex was absent; he was unable to hold his urine for any length of time, having to pass it as often as forty-five times a day; anæsthesia was present; and the passage of sensory impressions through the cord was considerably prolonged. A specific history was admitted. Dr. Hammond treated him with iodide of potassium and bichloride of mercury, alternating occasionally with nitrate of silver. The actual cautery was applied to the spine, together with dry cups, ether spray, and galvanism. Improvement in his symptoms was gradual, but steady; the anæsthesia disappeared, he began to stand and walk better, and his urinary symptoms improved, but the tendon reflex did not return.

Not having seen him for nearly a year, I wrote to him on May 21st. Two days later I received a letter containing the following statements: "Dear Doctor.—In reply to yours of the 21st, it affords me great pleasure to state that I have not enjoyed such good health in years, and, as far as I am able to judge, *completely cured of locomotor ataxia*. I have no difficulty in walking or standing in any position, and feel equal to any physical exertion. As to my bladder, I hardly know I have one."

CASE IV.—Dr. Friedrich Schultz, of Heidelberg, in a paper entitled "*Zur Frage von der Heilbarkeit der Tabes*," which appeared in the "*Archiv für Psychiatrie und Nervenkrankheiten*," Berlin, 1881, Band xii, relates a most remarkable case. The patient, in April, 1871, was first seen by Erb. He was then forty-three years of age, and had been suffering for two or three years with lacerating pains in the lower extremities. For a year he had been unsteady on his legs, and had suffered from an inability to retain his urine. These symptoms gradually became worse. He was unable to walk in the dark, was totally unable to retain his urine at night, and could only do so during the day for a short time by making great efforts.

Under the use of nitrate of silver the latter trouble was somewhat improved, and he became able to stand better with his eyes closed. From the middle of April, 1871, the galvanic current was used, the patient continuing to improve in his powers of locomotion until the eye could hardly perceive any abnormality in his gait.

All of the symptoms gradually disappeared, until, in 1873, about two years after treatment began, he was considered to be perfectly well.

He remained well up to the time of his death, which occurred suddenly during an attack of acute intoxication. Just

* Read before the American Neurological Association, June 20, 1884.

previous to his death Dr. Schultz saw him, and noted the following facts: "The gait was perfectly normal, sensibility intact; the patellar tendon reflex on both sides was perfect; slight enuresis both at night and through the day."

Nine hours after death an autopsy was held. The spinal cord was found to be small and soft. Diffuse degeneration of the posterior columns in the lumbar region existed, together with degeneration of the outer division of the posterior columns of the dorsal region, and slight degeneration in the column of Goll.

I think this is a most instructive case. How it is possible for sclerosis of the posterior columns to exist without the manifestation of any symptom of ataxia, except a slight enuresis, can only be accounted for in one way. In such a case we are forced to conclude that some other condition of the cord, co-existing with or occurring separately from the sclerosis, is capable of producing a majority if not all of the symptoms of ataxia, and that this morbid state, under certain conditions, is capable of being removed by appropriate treatment. In support of this view let me quote the following cases:

CASE V.—Desnos, at the Société médicale des Hôpitaux, July 13, 1883, related the history of a characteristic case of ataxia which ended fatally. Cadiat, who made the autopsy, found the cord to be very intensely congested, but could not discover the slightest evidence of sclerosis of the posterior columns, or, in fact, of any part of the cord.

CASE VI.—Another case, reported by the same authority, refers to a man twenty-four years of age, who had contracted syphilis several years before. He was also exhausted by sexual excesses and literary pursuits. Desnos, after making a diagnosis of ataxia, prescribed five centigrammes of the proto-iodide of mercury, from four to five grammes of iodide of potassium, and four grammes of bromide of potassium every day. This treatment was interrupted several times on account of its causing gastric disturbances, but at the end of five weeks the patient showed considerable improvement. Shortly after the patient was regarded as completely cured. Desnos regarded this also as a case of congestion.

CASE VII.—Dr. Henry Lyman, in the "Chicago Medical Journal and Examiner," January, 1883, reports a very interesting case. The patient consulted him in 1879. He was then suffering from lightning-like pains in the legs, anesthesia, paræsthesia, and analgesic patches on the limbs. The tendon reflex was absent, the ataxic gait was well marked, there was loss of co-ordination in the upper extremities, inequality of the pupils, and choked disc. The treatment at first consisted of ergot, nitrate of silver, and galvanism. The patient did not improve. On a visit to New York he consulted Dr. Seguin and Dr. Beard, both of whom confirmed the diagnosis of ataxia. He continued using nitrate of silver and galvanism, together with iodide of potassium and bichloride of mercury. In January, 1881, some of his friends advised him to use Junod's boot. He did so, and, after a month's trial, the pains in his legs began to disappear. He then procured some dry cups, which he applied to both sides of the spine, still continuing the use of Junod's boot to both legs. In the summer of 1881 all pain ceased, the rectum regained its power, the eyesight improved, and the sphincters of the bladder were restored to their normal state. Some time later, when Dr. Lyman examined him, he found there was still some slight degree of ataxia in the movements of the feet, the upper extremities were perfectly manageable, the anesthesia had disappeared, but the tendon reflex had not returned. The patient walked well and rapidly without a cane.

The first case mentioned in this paper is certainly a complete cure, and, with a single exception (the case reported by Dr. Schultz), is the only one in which the tendon reflex has been restored. The third case, the patient residing in Peekskill, and who was under the care of Dr. W. A. Hammond, is a complete cure, except that the tendon reflex has never been re-established. This is no evidence that he is not entirely well. It is a well-known fact that a few persons never have had any knee reflex, and it is barely possible that this may be the case with him. If it is not so, it is conclusive proof that some morbid pathological condition still exists in the spinal cord. It may be sclerosis, or it may be congestion; no one can tell. It has just been shown in Dr. Schultz's case that sclerosis existed in both the lumbar and dorsal regions, and yet the patellar tendon reflex was present in both legs. We must therefore conclude that the deep reflexes are not always, if ever, transmitted, as is commonly supposed, through the posterior columns, but sometimes at least pass through the posterior horns of gray matter. It would in that case be impossible to tell whether the symptoms were caused by a lesion in the posterior columns or in the posterior horns of gray matter. The case reported by Desnos, in which the autopsy was made by Cadiat, showed that all the symptoms were due to congestion, and it would seem as if the symptoms in Schultz's case must also be attributed to the same cause. They certainly were not dependent upon the sclerosis. Lyman's case, which was so much improved by dry cupping to the spine and Junod's boot, was undoubtedly relieved by the dissipation of the congestion in the cord.

From a study of these cases, I have arrived at the following conclusions:

1. That the absence of the patellar tendon reflex in locomotor ataxia is not always caused by sclerosis of the posterior columns.
2. That sclerosis of the posterior columns may exist without being accompanied by the ordinarily prominent symptoms of ataxia.
3. That congestion of the posterior half of the spinal cord may give rise to most, if not all, of the symptoms of locomotor ataxia.
4. That it is impossible during life to make a differential diagnosis between posterior spinal sclerosis and posterior spinal congestion.
5. That posterior spinal congestion is curable.
6. That there is no evidence to show that sclerosis once existing in the spinal cord has ever been removed.
7. That those cases of so-called locomotor ataxia which have been cured are simply cases of spinal congestion more profound in the posterior half of the cord.

Contagious Pleuro-pneumonia among Cattle in the West.—A serious outbreak has taken place among Jersey cattle in Illinois, and Dr. Salmon, of the Bureau of Animal Industry, who has investigated the matter, has reported that there is no doubt as to the nature of the disease. He also expresses the fear that the infection has been extensively diffused, since many of the cattle were widely distributed as the result of a sale. It is stated that the most energetic measures will be taken, both by the national authorities and by those of the State, to limit the progress of the disease so far as possible.

Book Notices.

The Pathology, Diagnosis, and Treatment of Diseases of the Rectum and Anus. By CHARLES B. KELSEY, M. D., Surgeon to St. Paul's Infirmary for Diseases of the Rectum, etc. With two chromo-lithographs and nearly one hundred illustrations. New York: William Wood & Co., 1884. Pp. xiii-416.

This excellent work, while it has for its basis the volume on the same subject contributed by the author to "Wood's Library of Standard Medical Authors" in 1883, contains an entirely new chapter of thirty pages on Rectal Hernia. Many changes have also been made, chiefly of such a practical character as would be suggested by the daily practice of the specialty. The author's style is conspicuous for clearness and aptness, and his quotations are terse and to the point. The latter makes a virtue of what might well have become a fault in a book which makes such frequent allusions to other works.

A prominent feature is the large number of excellent illustrations to relieve the text of many long descriptions which would otherwise be necessary. To the practicing physician it is of the greatest importance to have for reference a book which faithfully depicts the measures of treatment that are still in vogue, and does not contain long passages referring to treatment which has become obsolete. In this regard Dr. Kelsey's work can not fail to give satisfaction. It clearly describes the methods of treatment which are to-day approved of by the best authorities, and seldom fails to give the reader definite ideas and plans upon which he can act at once.

BOOKS AND PAMPHLETS RECEIVED.

Proceedings of the First Three Meetings of the Surgeons of the Eastern Division, W., St. L., & P. R'y, held, respectively, at Decatur, Ill., Fort Wayne, Ind., and Springfield, Ill.

Phthisis Pulmonalis, etc. By L. H. Wood, M. D., Denver, Col. [Reprint from the "Denver Medical Times."]

Correspondence.

LETTER FROM WASHINGTON.

The late Surgeon Woodward.—Congressional Items.—Measures for the Suppression of Traveling Quacks.—Dr. Fisher, of the Marine-Hospital Service.—Vital Statistics and the Census. The Washington Chemical Society.

WASHINGTON, August 26, 1884.

Or that remarkable trio who have made the Medical Department of our army famous throughout the world, only Dr. Billings remains. His splendid physique has hitherto preserved him from the consequences of the intense application which proved fatal both to Otis and to Woodward. We hear occasionally that such and such a one will be assigned to fill the place of Woodward. Nobody can fill such a place; both Otis and Woodward were *sui generis*; they were made such partly from the original bent of their minds and partly from their surroundings; but, in the absence of original adaptability, no outcome such as we have seen could be produced through any combination of circumstances. Hence those are likely to be doomed to disappointment who conclude that the official order is all that is needed to find a man to complete the third volume of the "Medical and Surgical History of the War of the Rebellion."

Expertness in chemistry, microscopy, and pathology may indeed be found, but the volume will lack the varied and ripe experience that Woodward's twenty years of application in that particular field alone could give.

The laws of the last session of Congress, now published, contain many things of professional interest not heretofore noticed in your columns, among them the law providing for the publication of the reports of the Bureau of Animal Industry, of which Dr. Salmon is the chief, and the establishment of the precedent for pensions to female nurses during the late war. (An Act for the relief of Maria L. Hammer, private No. 81.)

The Medical Society of the District of Columbia, at one of its recent meetings, appointed a committee to inquire what action might lawfully be taken against the unusual number of traveling quacks that frequented the city during the past winter, owing, no doubt, to the fact that so many of the States have adopted stringent laws concerning them. The committee, after an examination of the subject and consultation with the district attorney, reported that it was unlawful for any person to practice medicine or surgery in the district without a license from the medical society. It was then ordered that any member having knowledge of a person practicing without authority should report the fact to the corresponding secretary. It was made the duty of that officer to notify the accused to appear before the board of examiners and make application for license. It appears there is a penalty of fifty dollars attached to a violation of the law, one half of which, when collected, goes to the informer. No convictions have yet been had, but it is presumed that a knowledge of their liability may induce the wandering quacks to seek "pastures new."

The many friends in this city of Dr. John C. Fisher, of the Marine-Hospital Service, have been not a little surprised to learn of his resignation. It appears that he goes to Beirut, Syria, to become connected with the medical college and hospital at that place, which is conducted under the auspices of the American Protestant Missionary Society. If the doctor will furnish as entertaining reports from Syria as Dr. Stuart Eldridge (Georgetown, 1868) has from Japan, medical literature will be greatly the gainer.

The Report on Vital Statistics by the United States Census Bureau is completed but not yet issued. The plan of this part of the census is the work of Dr. Billings, and will doubtless embody his well-known views on registration. The value of statistics gathered from every village and hamlet in the United States will necessarily be great. Ordinarily, the published health statistics are from cities only, the rural population and mortality being left out of the account, but for this work every physician, regular as well as nondescript, city and country, was requested to make a return of the mortality occurring in his practice during the year. A blank-book was furnished and return postage given. As the returns of the physicians were made to tally with those of the enumerators, the percentage of error is probably very slight. It is a pity that this branch of the census can not be made a permanent organization, with annual reports instead of a volume covering only a single year out of the ten.

The Washington Chemical Society was recently organized. There are few cities where such a society can have so many active workers. The Patent Office, the Smithsonian Institution, the National Museum, the Mint Bureau, the Agricultural Department, the Geological Survey, as well as the various medical bureaus of the Government, employ chemists, and some very bright ones at that, so that the capital is in no wise behind in the study of general science.

A school of technology has recently been begun in connection with the Columbian University.

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FRANK P. FOSTER, M. D.

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THE WASHINGTON MEETING OF THE INTERNATIONAL
MEDICAL CONGRESS.

Now that it seems to have been definitely settled that the next International Medical Congress is to be held in this country, it behooves the entire medical profession in the United States to do its best to secure a successful meeting. The invitation, it is true, was formally authorized by the American Medical Association, and it was in every way proper that that should be the case; but it will take more than the resources at the command of the association to assure the full measure of success to which we may reasonably aspire. If we understand the matter aright, Dr. Billings, of the army, who, as the chairman of the association's committee, conveyed the official invitation, is in a position to exercise a controlling action with regard to the general outline of the arrangements, and without being strictly bound down to the employment of the association's machinery. That is to say, in the constitution of his subcommittees he is at liberty to seek after the men that may seem to him the best for the purpose, although they may not be prominent in the association or even connected with it in any way. In short, the work is not to rest solely upon the shoulders of any organization now in existence—not even of so broad an organization as the American Medical Association. And we think this state of things is fortunate, for, as we hinted at the outset, it will tax the strength of the profession, as a whole, to make a showing at all fit to be compared with what was seen in London or with what has recently been seen in Copenhagen.

In the matter of entertainments—and, say what we may, that phase of the undertaking will be uppermost in many men's minds—we can not hope to equal the capital of the richest empire in christendom, and we shall be fortunate if we can come up to that of the little kingdom in which a meeting has just been held. The pomp of royalty is unknown among us, and we have not so much as a Lord Mayor to fall back upon. The time may have passed when any considerable sincerity could attach to our pretensions to a simple mode of life, but whatever lavishness there is among us is not likely to creep out into view to any great extent in the overcrowded ranks of the medical profession. Our nabobs have no particular interest in medicine, and the officers of our National Government, whatever their willingness may be, have nothing but their private means to draw on for purposes of hospitality. Under those circumstances, we think it would be perfectly proper for Congress to make a handsome appropriation to cover the expense necessarily involved in entertaining our visitors on a scale approaching that which our importance as a nation certainly calls for. But, that resource failing, good feeling may be shown in a

tent as unmistakably and quite as effectively as in a palace, and, although we may not make much of an impression on that one of our London contemporaries which has already taken occasion to remark that now the Americans would have a chance to show what they could do, there is no reason to doubt that we shall be able to make our visitors comfortable. For the rest, so far as the social element is concerned, we must trust to their good nature.

The matter of hospitality, however, is not the most puzzling with which we shall have to deal; the intellectual vitiating will try us more. In view of our isolated situation, it is hardly to be supposed that we can count on so large an attendance from foreign countries as the smallest European State could; it will therefore occur to us that we must furnish more of the scientific matter ourselves than would otherwise be expected of us, and yet we must not overdo the thing. Just where to draw the line between a barren dearth and a surfeit will be the delicate question. We may well imagine that there will be no lack in quantity, but the rub will come in connection with the matter of quality. Much will depend, in this respect, upon the make-up of the auxiliary committees, and it is to Dr. Billings's rare penetration and discretion in such affairs that we look in entire trustfulness.

On the whole, then, while it would be unwise for us to try to make a show of pageantry, the angury seems good for a satisfactory meeting, but the three years that are to elapse are none too long a time in which to make our preparations.

THE ARMY WORM AND THE CHOLERA FUNGUS.

In its early history, and, indeed, up to a comparatively recent period, medicine, in common with other fields of scientific inquiry, was beset with theories—fairly overgrown with them, as a tender plant may be well-nigh choked with worthless weeds. This clog upon its progress it had to endure much longer than almost any other branch of science, and the reason of its prolonged bondage it is not difficult to comprehend. Dealing constantly with the unlearned, and dependent on their favor for their daily bread, its practitioners have always felt, and for a long time to come, it is to be feared, must continue to feel, the pressing necessity of keeping up a close approach to the omniscience which the popular demand assumes that they ought to possess. Such a pose can be maintained only by a bearing quite the reverse of the scientific attitude. He who says "I don't know" is like him who hesitates—lost. The man of science asserts nothing until he thinks it is proved; the man of the people—and a doctor must be that to achieve material success—gives loose rein to his fertility of resource, and is ready to assert anything plausible, provided he has no reason to think that his interlocutor is capable of disproving it. Thus it happens that men who must every day thrust their tongues into their cheeks, like the augurs of old, to keep themselves from laughing, are tempted by the force of habit to carry this acquired facility of theorizing into their intercourse with their fellow-workers and into their own serious thoughts. Under a particular set of circumstances they are, indeed, quite prone to

yield to the temptation, namely, when they find themselves literally on the witness-stand in a court of justice. But it is one of the greatest virtues of physicians that, with that single exception, their studied ingenuity is resolutely cast off when they find themselves face to face with the real problems of nature; there is no more sturdy agnostic than the medical investigator.

This sort of self-discipline has come to be recognized as the touch-stone by which the scientific *afflatus*, so to speak, is to be recognized. Has it not been carried too far? Is it not mainly responsible for the "therapeutic nihilism," to use Professor Bartholow's happy phrase, that, having answered its purpose, has become effete, and must be cleared away as rubbish? We do not doubt it. Not that we could afford, in the interest of our art, to lapse into the easy-going ways of the old "authorities"; but it does seem that we ought to halt somewhere between that point and the sway of the dictum that would limit the working of man's mind to that of a recording instrument—that commands him to rest content, when he hears the voice of nature, to play the part of a phonograph.

Elsewhere in this issue of the journal we publish what seems to us a shining exemplar of the justness of our view, in the form of an abstract of a remarkable paper read before the Chicago Medical Society by Dr. John Bartlett—a paper which we look upon as substantiating the occasional utility of even a degree of daring in the matter of theory, if only, to use Dr. Bartlett's words, "as a framework which might hold together in an apparently perfect order and relation a large number of fragmentary facts that might be lost sight of if allowed to lie detached and disconnected." In a note which accompanied the manuscript report of the meeting, the secretary of the society, Dr. Montgomery, says: "The illustrations made use of, the army worm and the marsh fungus, have been carefully studied in the field by the author. He was the first writer on the army worm—as early as the year 1861 he wrote a long article. His experience with the cholera has also been ample." We can readily imagine that it was not until after abundant study that Dr. Bartlett was enabled to display such a masterpiece of analogy as that in which he traces the probable points of resemblance between the migrations of the worm in question and those of the cryptogam, whatever it may be, that gives rise to the cholera. It seems to us that an analogy of such complexity, and yet of such strict compatibility with known facts, while it reflects the highest credit on its author, can not but be of service in the study of the etiology of cholera, and we are quite prepared to see the army worm turn out to have thus made some amends for its ruinous existence.

THE COMMA BACILLUS.

ALTHOUGH the bacillus of tuberculosis can scarcely yet be said to be beyond the need of Dr. Koch's parental protection, so to speak, he seems amply prepared to do battle for the deadly comma bacillus. While it is true that Dr. Strauss and Dr. Roux, among Pasteur's followers, are still positive that the comma bacillus has been found associated with other diseases

than cholera, and while it is urged as an objection to Koch's views that inoculations of the lower animals with the comma bacillus have not yet succeeded in communicating cholera to them, Koch boldly declares himself perfectly satisfied that his bacillus is the cause of cholera; and it must be confessed that, thus far, he seems to have the best of the dispute.

So far as we have noticed, Strauss and Roux have not been very explicit in their statements as to what other diseases than cholera are associated with the presence of the comma bacillus, and it is possible that they may have been deceived by a micro-organism, said to have been observed in India, which is described as indistinguishable from the comma bacillus except by its being somewhat thicker, and by its being destitute of the property of liquefying gelatin. The slight difference in thickness may well have escaped observation, and we have no information that the organism was subjected to the gelatin test in the cases alluded to.

In regard to the objection that all attempts to convey cholera to the lower animals by inoculating them with the bacillus have failed, Koch does not, so far as we have observed, assert without reserve that the lower animals are proof against the disease, but he certainly adduces a number of facts which can only be interpreted as showing that that is the case. Among others, it seems that diligent inquiry brought out the fact that the disease had never been known to attack the lower animals in a certain district of India where it was always, and had been from time immemorial, prevalent among human beings. If we concede the immunity of the lower animals, this fact, as Koch remarks, ought not to be held as invalidating the position that the bacillus gives rise to the disease, for, as he correctly observes, various parasites have their particular "hosts," and will gain a foothold in none others—different animals, for instance, constituting the exclusive abode of so many separate varieties of tape-worm. It has been made to appear, however, that, under certain circumstances, choleraic dejecta do exert a most pernicious effect upon swine, alone of all the animals on which they have been tried (for Thiersch's results in experiments on white mice Koch has not succeeded in producing); but, yet, cholera has not been given even to swine.

This evil effect on hogs seems to throw some light on the *modus operandi* of the cholera bacillus. It does not kill by direct infection of the blood, for it does not enter that fluid; indeed, it seems to flourish nowhere except in the lower part of the ileum, and is seldom ejected with the vomited matter, and then, as Koch thinks, only when there is fecal vomiting. Its peculiar pathogenetic power, therefore, may be connected with its capability of giving rise to the production of poisonous material, like the power of some of the bacteria to give rise to septicæmia in the same indirect way.

The comma bacillus seems to be easily killed, or at least deprived of its power for harm, desiccation being sufficient for that purpose; hence Koch concludes that cholera is never transported in merchandise, and seldom if ever by the wind, but only by human intercourse. The whole history of cholera outbreaks confirms this view, and the supposed local origin

of certain epidemics appears to have been pretty thoroughly disproved.

According to Koch, the bacillus can not be supposed to be a product of the cholera, for there are no facts to show that any disease can create a living organism; and it is highly improbable that it is some ordinary bacterium transformed by the disease, for no analogous transformation has been witnessed. The bacillus is peculiar to the human subject, and is never met with except in the intestine of man, or in media that may reasonably be supposed to have derived it from human excreta.

The practical bearing of Koch's discovery lies chiefly in its enabling us to make a positive diagnosis in doubtful cases, and to avoid loss of time in taking measures to prevent the spread of the disease.

MINOR PARAGRAPHS.

THE "POISON" LABEL IN PHILADELPHIA.

A MEETING representing the medical profession and the drug trade of Philadelphia has been held to take action upon the case, alluded to in our last issue, in which a deputy-coroner held a dispensing clerk responsible for omitting to affix the "poison" label to a box of strychnine pills, a young woman having lost her life as the result of swallowing a number of the pills. At the meeting much indignation was expressed at the conduct of the deputy-coroner, and many of those present declared positively that they would not conform to that official's interpretation of the law bearing upon the matter. The law reads as follows:

No apothecary, druggist, or other person shall sell or dispose of by retail any morphia, strychnia, arsenic, prussic acid, or corrosive sublimate, except upon the prescription of a physician, or on the personal application of some respectable inhabitant of full age of the town or place in which such sale shall be made; and in all cases of such sale the word "poison" shall be carefully and legibly marked or placed upon the label, package, bottle, or other vessel in which such poison is contained.

The deputy-coroner's construction of the law was held to be negative by the comma before and after the clause "except upon the prescription of a physician." That will do if it is sustained by the courts, but it seems to us that there are more solid grounds for disputing the deputy-coroner's interpretation.

NEWS ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending August 26, 1884:

DISEASES.	Week ending Aug. 19.		Week ending Aug. 26.	
	Cases.	Deaths.	Cases.	Deaths.
Typhus	2	1	0	0
Typhoid Fever.....	36	9	26	14
Scarlet Fever.....	30	4	32	6
Cerebro-spinal meningitis. . .	1	1	2	2
Measles	43	6	47	11
Diphtheria	22	14	22	11

Cholera.—The situation in France has not changed materially during the week, and the interest of the outbreak now centers rather in the few Italian towns in which the disease has made its appearance. In most of those towns it seems to be on the increase, and in some of them the population have become

more or less panic-stricken. A stowaway was reported to have been landed at an Irish port last week, suffering, as the local physicians thought, from Asiatic cholera. A British steamer from St. Lucia arrived at the port of New York last Saturday night, suspected to be infected with the disease, and was detained at the Lower Quarantine for fumigation.

Yellow Fever.—A Norwegian bark, from New Orleans for Gibraltar, arrived off Pensacola on Sunday, and was visited by the quarantine surgeon, who found evidence of the disease on board. By order of the Board of Health, the vessel left for Ship Island.

The Pollution of the Drinking-Water of Philadelphia has lately engaged the attention of the public officers, and proceedings are reported to have been begun against several manufacturing firms, charged with allowing waste products to enter the waters of the Schuylkill from their factories.

The Late Surgeon Woodward.—The Surgeon-General of the army has issued the following:

WAR DEPARTMENT,
SURGEON-GENERAL'S OFFICE,
WASHINGTON, D. C., August 20, 1884.

In announcing to the officers of the Medical Department the death of Joseph Janvier Woodward, Surgeon and Brevet Lieutenant-Colonel, U. S. Army, which occurred near Philadelphia, Pa., August 17, 1884, the Surgeon-General wishes to offer his tribute of respect to the memory of the deceased, whose distinguished career and valuable services, for a period of twenty-three years, have shed luster on the corps, and for whose untimely loss feelings of profound regret will be shared alike by his comrades in arms and by the profession at large.

Dr. Woodward was born in Philadelphia, Pa., October 30, 1833, and was educated at the Central High School of that city, graduating with honor as Bachelor of Arts in 1850, and receiving the degree of Master of Arts from the same institution in 1855.

He graduated in medicine at the University of Pennsylvania, April, 1853; entered the army as assistant surgeon, August 5, 1861; became captain and assistant surgeon, July 28, 1866; major and surgeon, June 26, 1876. "For faithful and meritorious services during the war" he received the brevets of captain, major, and lieutenant-colonel, U. S. Army.

He was assigned to duty in this office May 19, 1862, and from that date until the beginning of the illness which terminated in his death was intimately identified with its professional and scientific work.

While the valuable results of his life's labor are comprehended in a long list of miscellaneous publications, both professional and scientific, too familiar to the corps to require individual mention, his greatest triumphs were won in the field of microscopical investigation in normal and pathological histology, and in his happy application of photo-micrography to the purposes of science. In these pursuits he attained remarkable success, and achieved an enviable, world-wide reputation, leaving to science and medicine lessons of undoubted value and usefulness. Of his strictly professional work, the medical portion of the "Medical and Surgical History of the War of the Rebellion" was the crowning achievement. In the second part of this work he developed the results of his careful investigations into the nature and pathology of the intestinal diseases which had proved so fatal in the late war. Here also he displayed his wonderful capacity for that minute and exhaustive research which forms so striking a feature of his writings.

As in the case of his co-laborer, Otis, he yields to other hands the honor of completing his labors.

In addition to his engrossing professional duties, his restless activity of mind led him to seek recreation in his favorite studies, physics, art, and physiology.

Endowed with a retentive memory and of untiring industry, he acquired a vast store of information which he held available for use at will; fluent of speech, he took delight in the expression of his views and opinions both in social converse and in the arena of scientific debate.

His fund of knowledge, his strong convictions, his tenacity of opinion, and his quick perception made him a controversialist of no low order.

With such a record, it is needless to speak of his zeal, his ambition or his devotion to his profession, and especially to the reputation of the corps of which he was so bright an ornament.

Of a sensitive, highly strung, nervous organization, the confinement, anxiety, and labor to which he was subjected in his attendance upon the late President Garfield during his long illness proved too much for a mind and body already overstrained by incessant labor, and precipitated the illness which finally terminated his life.

At the time of his death Dr. Woodward was a member and ex-president of the American Medical Association, a member and ex-president of the Washington Philosophical Society, a member of the National Academy of Science, of the Association for the Advancement of Science, of the Academy of Natural Sciences of Philadelphia, and of the College of Physicians of Philadelphia. He was an honorary member of several American and foreign scientific, medical, and microscopical societies, and the recipient of many distinguished honors from learned bodies in this country and abroad.

R. MURRAY,

Surgeon-General, U. S. Army.

The Late Sir Erasmus Wilson, according to the "Lancet," so provided by the terms of his will that the Royal College of Surgeons, as residuary legatee, will receive about £180,000, and the Royal Medical Benevolent College, the Medical Benevolent Fund, and the Sea-bathing Infirmary at Margate about £5,000 each.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from August 17, 1884, to August 23, 1884:*

CRAMPTON, LOUIS W., Captain and Assistant Surgeon. To report at Creedmore, Long Island, N. Y., not later than August 30th, as competitor, and, in addition thereto, as medical officer of the detachment of competitors. S. O. 41, Division of the Atlantic, August 20, 1884.

COCHRAN, J. J., First Lieutenant and Assistant Surgeon. Assigned to duty at the Presidio of San Francisco, Cal. S. O. 81, Division of the Pacific, August 16, 1884.

BIRMINGHAM, H. P., First Lieutenant and Assistant Surgeon. Granted one month's leave of absence. S. O. 162, Department of the Missouri, August 12, 1884.

WILSON, GEORGE F., First Lieutenant and Assistant Surgeon. Relieved from duty at Fort Walla Walla, W. T., and to take station at Vancouver Barracks, W. T. S. O. 120, Department of the Columbia, August 13, 1884.

FISHER, W. W. R., First Lieutenant and Assistant Surgeon. When relieved by Assistant Surgeon Cochran, to report in person to commanding general, Department of Arizona, for assignment to duty in that department. S. O. 81, C. S., Division of the Pacific.

WOODWARD, J. J., Major and Surgeon. Died August 17, 1884.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the Navy for the week ending August 23, 1884:*

RIXEY, P. M., Passed Assistant Surgeon. Orders to U. S. S. Lancaster revoked. To continue on special duty.

MARTIN, C., Medical Director. To be retired August 21, 1884.

HEYL, T. C., Surgeon. Detached from U. S. S. Independence and ordered to U. S. S. Adams.

AYERS, J. G., Surgeon. Detached from U. S. S. Adams and placed on waiting orders.

CURTIS, L. W., Assistant Surgeon. Detached from U. S. S. Adams and placed on waiting orders.

STEPHENSON, F. B., Passed Assistant Surgeon. Detached from Navy Yard, New York, and ordered to C. S. S. Bache.

DEBBE, E. Z., Passed Assistant Surgeon. Detached from C. S. S. Bache and placed on waiting orders.

Society Meetings for the Coming Week:

MONDAY, September 1st: British Association for the Advancement of Science (Montreal—fifth day); Brooklyn Anatomical and Surgical Society (private); Morrisania Medical Society (private); Medico-Chirurgical Society of German Physicians; Utica, N. Y., Medical Library Association.

TUESDAY, September 2d: British Association for the Advancement of Science (sixth day); Buffalo, N. Y., Medical and Surgical Association; Ogdensburg, N. Y., Medical Association; Elmira, N. Y., Academy of Medicine; Medical Societies of the Counties of Franklin and Niagara, N. Y., and Hudson, N. Y.

WEDNESDAY, September 3d: Medical Society of the County of Richmond, N. Y.

THURSDAY, September 4th: American Association for the Advancement of Science (Philadelphia—first day); Society of Physicians of the Village of Canandaigua, N. Y.

FRIDAY, September 5th: American Association for the Advancement of Science (second day); Practitioners' Society (private).

SATURDAY, September 6th: American Association for the Advancement of Science (third day); Manhattan Medical and Surgical Society (private).

OBITUARY NOTES.

Dr. C. W. Chamberlain, of Hartford.—Dr. Charles Walter Chamberlain died at his home, in Hartford, Conn., on Thursday of last week, having just passed the age of forty. He was a native of Providence, R. I., and received his academic education at Brown University in that city. He took his medical degree at the College of Physicians and Surgeons, New York, in 1871. He quickly attained to a prominent position in the profession in Connecticut, having settled in Hartford, and for eleven years he was the secretary of the Connecticut Medical Society. At the time of his death he was the president of the Hartford County Medical Society, and one of its delegates to the American Medical Association, and was also the secretary of the State Board of Health of Connecticut, a position which, according to our information, he had held since the organization of the board. He was much interested in public sanitation, and we have often had occasion to quote from his monthly reports. As an individual, too, he had contributed to our columns at various times. Although he was a general practitioner, Dr. Chamberlain gave special attention to laryngology during the latter years of his life. He attended the last annual meeting of the American Laryngological Association, held in New York last May, and seemed then in robust health. We are not informed as to the cause of his death. Dr. Chamberlain was not only of solid repute in his profession; he was also justly esteemed for the manliness of his personal character.

Dr. John H. Dix, of Boston.—Dr. Dix died suddenly, on Monday, the 25th inst., at the age of sixty-five. He was a native of Boston, and obtained his academical education at Harvard, but was graduated in medicine from the Jefferson Medical College, of Philadelphia, in 1836. For many years he was widely known as an ophthalmologist, and he enjoyed a large and lucrative practice in diseases of the eye. He is said to have died of an affection of the heart.

Dr. Clarence E. Black, of the Navy, is supposed to have been lost in the disaster which overtook the United States steamer Tallapoosa in Vineyard Sound on Thursday of last week. He was serving as a medical officer on board that vessel, and, shortly before she went down, he was observed to try to cast himself into the water, but it was thought that he became entangled in an awning and was consequently drawn down and

prevented from gaining the surface of the water. Dr. Black was a native of the Province of New Brunswick. He was appointed an assistant surgeon in the navy in 1871, and in 1875 was promoted to the grade of passed assistant surgeon.

Proceedings of Societies.

CHICAGO MEDICAL SOCIETY.

Meeting of August 18, 1884.

The President, Dr. D. A. K. STEELE, in the chair.

Remarks on Cutaneous Therapeutics was the title of a paper read by Dr. P. C. JENSEN. The integument, he said, retained many of the primitive characters of early embryonic life when it dipped into the interior of the body by deep folds and involutions, to be subsequently differentiated into organs for special function, such as the alimentary canal and the accessory organs, furnishing prolongations for the formation of the spleen, the kidneys, the bladder, the external and internal genital organs, etc. In all instances the excretory organs consisted essentially of liminary membrane, forming part of the integument of the body or its involutions. The lachrymal, salivary, pancreatic, and mammary glands were in like manner composed of a continuation of the liminary membrane of the true skin or of the mucous membrane lining the alimentary canal, involutioned into tubes and follicles the free surface of which was covered with epithelial cells. It was this early embryological relation of the true skin to the internal organs that furnished us with so essential a factor in therapeutics. In cutaneous disease, as in lesions of the internal organs, it was worth remembering that much of the functions of disabled organs could be carried on by the compensatory action of neighboring organs. In congestion of the kidneys we relieved and depleted by bringing the skin and bowels into energetic action, and, by removing the burden, we enabled the overworked kidneys to rest. Conversely, elimination by all the emunctories was essential in the treatment of diseases of the skin. Upon the back of a horse Colin caused water impregnated with potassic cyanide to drip for five hours. The percussion effected destruction of the sebaceous matter, with absorption of the cyanide, and poisoned the animal. In Vienna patients had remained immersed in a bath for weeks and months without any perceptible degree of absorption taking place. Usually the small quantity of material absorbed was introduced either by points of transition between the skin and mucous membrane, or by the orifices of the sebaceous and sudoriparous glands. When the cutaneous surface of a limb was immersed in putrid gases absorption took place (Bichat), and the poison was subsequently eliminated by the bowels. The rate and degree of absorption of any medicine would depend largely upon its power of diffusion. Physiologically, the skin might be considered a colloidal septum, on one side of which lay the blood-vessels containing an alkaline fluid, while there was an acid on the other side—a condition most favorable to osmosis. Medicinal substances in aqueous solution slowly permeated the skin to enter into the circulation. Alkaloids dissolved in chloroform were readily transferred through the skin into the blood-vessels, while alcoholic and aqueous solutions were either not absorbed at all or only very slowly, according to Waller, whose observations had been made with chloroformic solutions of atropine, aconitine, morphine, and strychnine. The same physiologist had ascertained that alcohol mixed with chloroform did not retard absorption, but that alcohol alone caused an osmotic flow.

With these remarks as a foundation, the reared proceeded, to consider the *local treatment of skin diseases*, including, 1. Protection, the exclusion of air when its contact was injurious; 2. Cleanliness, through ablutions, the removal and prevention of diseased products; 3. The checking or limiting of liquid disease-products, whether sanguineous, sebaceous, serous, or puriform; measures to enable the remedies to act directly, without injury to the surrounding parts. To fulfill these requirements we had: (a) plasters, (b) ointments, (c) tinctures, (d) dry powders, (e) alcoholic and ethereal solutions, (f) chloroformic solutions, (g) oleo-palmitates. Those most commonly used were the metallic oxides and the salts of the following metals: lead, silver, mercury, zinc, copper, and aluminium. There were also various astringents, sedatives, and anodynes of organic origin. Of the local remedies, the more recent ones were salicylic acid, chrysarobin, chrysophanic acid, pyrogallic acid, and naphthol. Tilly Fox had used goa-powder formed into a paste with water, applied to psoriatic patches, and retained in position with collodion. Sesemann employed chrysophanic acid six grammes, to collodion four grammes. Pick recommended chrysarobin gelatin of different strengths, and applied glycerin over the gelatin. Unna had proposed chrysarobin plasters; Müller, ointments of chrysophanic acid spread on muslin; but all these methods would often produce dryness, irritation, pain, and tenderness, and therefore they were impracticable. Dr. Kohn used a solution which he termed traumaticin, consisting of one part of gutta-percha in two parts of chloroform. It was said to form a thinner and more delicate covering than collodion or gelatin, causing neither tension nor pain. Traumaticin was a neutral covering and protective remedy. Ten-per-cent. solutions of it, when applied to large surfaces, did not cause irritation; besides, it produced more uniform pressure than collodion, glycerin, or gelatin.

The writer has treated a number of cases of psoriasis and obstinate chronic eczema substantially as follows: In most cases there was either a debilitated constitution, a gouty diathesis, anæmia, neurasthenia, or the like. Particular attention was paid to each constitutional dyscrasia. Eliminants were used to remove waste products and toxic *débris*, and for their derivative effect. Locally, after the removal of crusts, etc., an alkaline lotion was thoroughly applied, causing saponification of the sebaceous material and inducing an alkaline reaction favorable to osmosis and absorption. Thus:

Bicarbonate of sodium,	3 j;
Caustic potash,	3 ss;
Water,	O. j.

The following ointments had answered admirably in the writer's experience:

Powdered camphor,	3 ss.—3 j;
Chloroform, enough to dissolve it;	
Chrysophanic acid,	gr. xx;
Powdered opium,	3 ss.;
Cosmoline,	3 j.

This was to be applied after using the alkaline lotion. Tannin might be substituted for the chrysophanic acid, and vaseline for the cosmoline. Chloroform solutions were clean and effective. The following should be applied with a soft sponge:

Camphor,	3 ij;
Chrysophanic acid,	3 ss.;
Tincture of opium,	f 3 ss.;
Squibb's chloroform,	f 3 ss.—j;
Alcohol, enough to make	f 3 ij.

Carbolic acid might be substituted for the chrysophanic acid. The writer had also tried liquor gutta-perchæ as a vehicle

for chrysarobin and tannic and carbolic acids, and had found it very efficient.

The paper concluded with a general description of some of the neuralgias accompanying cutaneous disease, and gave a number of new formulae, among them the following, for local application in neuralgia of the fifth nerve, which would give marked and often instant relief:

Menthol,	3 j;
Sulphate of morphine,	gr. iij;
Tincture of aconite root,	f 3 ij-ii j;
Chloroform,	f 3 ij;
Spirit of camphor,	f 3 ij;
Dilute phosphoric acid,	gtt. xx.

The acid was added to favor absorption.

The cause of the neuralgia, which was symptomatic of some pathological condition, should be sought for and, if possible, removed, in order to effect a permanent cure, but the application alluded to would almost invariably afford relief.

Dr. C. E. WEBSTER inquired if using the oleates to act on the fatty substance would not be equivalent to using an acid to favor absorption; and, if it would, whether we could not get a double advantage by using both an oleate and an acid simultaneously.

Dr. H. J. REYNOLDS thought well of the paper. Regarding the causes of some of the skin diseases, he thought over-taxing of some of the organs and insufficient action of the skin at times would produce them. In the former case, where an organ has been overworked, defective action of some of the other organs might co-exist. Weather and climate had much to do as a cause. Some skin diseases prevailed in cold weather, as, for instance, psoriasis; while others were prevalent during the hot season. In the treatment, the great aim should be to perfect the equilibrium of the action of the skin and other organs. We relied too much on so-called specifics, and, in doing so, we were often defeated in bringing about the desired result unless the other idea was borne in mind—namely, to secure free action of the skin and other secretory organs. Although the few specifics, such as mercury, iodine, quinine, and arsenic, would enter largely into the treatment of these affections, there were external causes much more frequently present than we were generally led to suppose. The digestive tract also needed to be looked to. Another agent that might cause some of the forms of skin disease (singularly enough) was electricity. Just how it did it was a question which he was not fully prepared to answer; but, again, electricity was frequently of great service in the treatment of skin disease. He was sure its value was frequently underestimated, as nothing fulfilled certain indications for treatment so well as the application of electricity.

Dr. C. W. EARLE inquired if using chrysophanic acid, gr. xx to 3 j, would not cause an erythematous condition of the surrounding parts. Should we expect this from using the remedy in any strength, or was this proportion too strong?

Dr. JENSEN had used the oleates of zinc, mercury, and copper a good deal, and he had found them to be efficient remedies, easily absorbed and easy to apply, and they were very neat, but he had not used them so extensively as he had the acid preparations. Irritation from chrysophanic acid occurred when it was used in considerable strength, but adding opium or bismuth to the preparation would prevent this to a great extent, or the strength might be reduced.

Dr. REYNOLDS stated that chrysophanic acid was more apt to cause an eruption of an erythematous character when it was used while arsenic was given internally. The irritation was of a mild inflammatory order, analogous to what occurred to the mucous membrane of the stomach when arsenic was given for too long a time, or in too large doses.

Infant Feeding and the Summer Diseases of Children.

—Dr. EARLE read an elaborate paper on this subject, dealing largely with the prepared foods to be found in the market. He summed up his conclusions as follows:

"1. The most frequent infantile disease in the city during the summer months is entero-colitis.

"2. Excluding causes of infant mortality largely beyond our control, improper feeding is one of the chief causes of the great number of deaths among this class.

"3. Mothers should nurse their children. In lieu of this, a wet-nurse should be procured. If this is impossible, a mixed diet should be resorted to.

"4. Artificial foods containing considerable casein are found to be a cause of indigestion and summer disease.

"5. In many cases, cow's milk, diluted with water, does not seem to agree with children. Barley-water or rice-water as the diluent seems to make a more physiological food.

"6. Condensed milk seems to agree with a considerable number of children, but in many cases sufficient is not used to nourish a child. Used in proper quantities, and diluted with rice- or barley-water, it is without doubt one of the best of artificial foods.

"7. Cream, mutton broth, and white of eggs are valuable adjuncts in the diet of children.

"8. Whatever the artificial food a child is having, the physician should examine it frequently for evidences that it is a proper food as regards quality and quantity. The normal elevation of the fontanelles and increasing weight are among the conditions denoting a satisfactory and favorable nutrition."

Dr. J. S. KNOX judged from the paper that its author had been a bottle-fed baby, as he himself had been, and inquired if this was true. [He was answered affirmatively.] He differed a little with the writer regarding the causes of entero-colitis and other allied bowel affections of children, relative to improper diet. This in part was a cause, but the principal causes arose from or were peculiar to the hot weather of summer. Heat produced nervous exhaustion in a child. It became restless, and the fontanelles depressed. Therefore, the trouble at first was that the nervous system was depressed or exhausted. Urgent thirst came on. Then, too, children were wrapped up too much; the bottle-fed child especially was wrapped in flannels by the mother, and then it became more thirsty. It was probably fed on milk that had "soured," or on farinaceous food that had become fermented, either of which, probably, was given frequently. The heat and this form of diet produced fermentation in a child's stomach—indigestion, diarrhoea. A child from three months to ten years of age might need diffusible stimulants in the morning of a hot or sultry day. A little spirit of camphor, aromatic spirit of ammonia, or valerianate of ammonium, or even whisky-toddy, he had often given to his children, and none of them have ever yet had so-called summer complaint. For thirst, children should be permitted to drink good pure water, and they should be fed at regular intervals (not too frequently) with farinaceous articles that should be freshly prepared only at the time of administering them, and given no oatmeal. If Ridge's food was given, it should be prepared with cream, withholding milk at the time. Gruels and lime-water should be given. The secretions should be tested with litmus-paper to ascertain their reaction. Excessive heat would be most likely to produce a "heat diarrhoea." When the temperature was hot, he would give a child, when necessary, three, four, or even six cold baths a day. He had seen children go to sleep while in a cool bath. This should be done on the same principle as in typhoid fever. The cause was more apt to arise from heat, such as we had here during August, and exhaustion,

fermentation, irritation of the stomach and bowels, and interference with nutrition; and finally catarrhal diarrhoea supervened.

Dr. F. E. WAXHAM differed with the writer and the previous speaker as to the causes. The greatest cause was the combined effect of improper feeding, heat, and impure air. If the trouble was due to improper feeding, babies would die as readily in the country as in New Orleans, San Francisco, or New York. If it was due to excessive heat, they would die as readily in our better city districts, or in the country, where there was impure air, as in the poorer localities, where the houses were ill-ventilated and stifling with heat, where perhaps several children lay in one bed, where the air was tainted with filth—this, with sudden fluctuations of temperature, would produce a greater number of cases. Greater fluctuations of temperature occurred in Chicago, New York, Boston, and Omaha, than in New Orleans and San Francisco. It was more uniform in the two latter cities, and, when no other causes were present, children did not die in these cities so readily as in the others mentioned. With reference to cerebral symptoms, what was the reason, significance, and treatment of them? If a convulsion came on during an attack of enterocolitis, was it a result of reflex or of cerebral disturbance? It was the result of pain, and we should resort to opium and the bromides. There might be impending danger of hydrocephalus or meningitis. There might be blood stasis under the finger-nails. Now, was it not reasonable to suppose that a serous exudation might occur in the ventricles—analagous to that which we sometimes met with under the finger-nails—from want of tonicities in the blood-vessels? If so, we must give the child quinine and stimulants. It might be a gradual softening of the brain coming on. The speaker then cited a typical case of cholera infantum—in which the patient had been for two weeks at the point of death—that had, as he supposed, passed through these various stages of disturbance to the brain corresponding to the blood-stasis under the finger-nails. The child ultimately recovered.

Dr. D. M. TUCKER thought children did not require whisky-toddy in the morning before they had been taken sick, as one gentleman had stated. The same was true also in obstetrical cases, where a nurse generally wanted to give toddy to a baby almost the very first thing she did. Usually we were not called to see a child until it had become pretty sick—very sick. The very first thing we should do, then, was to regulate the diet early, if this needed to be done. If the baby had had toddy administered to it, we should order this sort of medication discontinued.

Dr. E. F. GASTON was of the opinion that the death of babies should frequently be attributed to inanition. The use of mixed diet, diluted milk, and condensed milk was in many instances over-done—the little ones did not get sufficient to sustain them. This applied particularly to infants that were bottle-fed, a few months old.

Dr. JOHN BARTLETT thought the sweetness of condensed milk was destructive to digestion, and that that feature was against its use. The causes of summer diarrhoea, of course, were several. Whether heat, sudden atmospheric changes, irregularity of diet, the constitution of a child, fermented foods, etc.—all these, no one would deny, were causes. He had had good success from using peptonized food, the pancreatic extract prepared by Fairchild, and other varieties, but did not wish specially to recommend either of these as being absolutely superior to some of the other varieties.

Dr. J. E. WALTON inquired of the last speaker how frequently he would order the prepared foods he had named to be given.

Dr. BARTLETT replied every three or four hours.

Dr. J. J. M. ANGEAR said that, according to physiologists,

children could not digest starch until there was saliva; and yet starch was given them in the treatment. From his observation, the most frequent cause of these summer troubles was over-feeding. Then, too, some cows' milk disagreed with children, and we wondered why. The milk of cows improperly cared for would present nearly all the prismatic colors of the rainbow if allowed to stand for a short time. This milk, he had been informed, was given to children in the Fourteenth Ward, about Chicago Avenue, where the greatest mortality among children occurred. If this was true, it should be remedied. He had been told that in London cans of milk designed for children were sealed by an official. If this idea was carried out here, our little ones would get better milk. How did heat produce the disease, or act as a cause? By depressing the nerve-centers. The heat affected not only the cerebral centers, but the cells of every part of the body. Heat at first stimulated these cells, then the cells died and contaminated the blood, and this material entered the bowels. The cold-water bath was one method of saving the vitality of these cells.

Dr. H. J. REYNOLDS thought, regarding the ætiology of enterocolitis, that, besides heat, imperfect feeding, filth, impure atmosphere, placing a child in a heated room, etc., a peculiar atmospheric condition, coincident with or without any of the other causes, might produce the disease. Electricity, conjointly with this peculiar condition of the air, might have much to do with the result.

Dr. C. E. WEBSTER said, respecting starch as a food for infants, that it might be interesting to note that recent experiments had demonstrated that the saliva of infants was capable of converting starch into sugar as early as the sixth day after birth. Deductions as to the practical value of this discovery were limited, however, by the fact that the saliva was a very small factor in the digestion of starch; the intestinal and pancreatic juices must aid. The matter of the digestion of starch by infants required further investigation.

Dr. G. C. PAOLI thought opium was a very frequent cause of the death of little children with cholera infantum. They should have better diet and plenty of fresh air, and, lastly, more hospitals for children should be built. We were deficient in this respect. Hospitals would do much toward saving children from the slums and alleys, where the poor have stale bread, and where decaying vegetable matter was constantly found polluting their scanty homes.

Dr. F. H. MARTIN spoke of the sanitarium recently erected at the foot of Twenty-fifth Street, on the Lake shore, carried on by Jewish ladies. A few healthy cows were kept there that were grass-fed, and given clean bran and good water; and from twenty-five to fifty babies were fed daily on fresh milk and biscuit.

A Theory of the Cholera.—Dr. JOHN BARTLETT read a paper with this title. While it must be admitted, he said, that our knowledge of the disease was very imperfect, it might be of interest and profit to frame some theory of it which should conform to every known fact regarding it, and which might afford explanations of the phenomena as satisfactory as our limited knowledge of such subjects would in the present state of science admit of. Such a theory would be of value, if simply as a framework which might hold together, in an apparently perfect order and relation, a large number of fragmentary facts that might be lost sight of if allowed to lie detached and disconnected.

Events were occurring about us similar in many particulars to the rise and spread of epidemic diseases. One of the most striking of these, perhaps, was the prevalence of that plague to vegetation, the army worm. The laws of this pest had something in common with those of cholera. Thus, the cause of the army worm was always present in, and indigenous to, certain

localities favorable to its development, life, and methods of propagation. Appearing yearly in these habitats, it spread occasionally, and with some show of periodicity, over extents of territory far beyond its normal range; and these periodic irruptions frequently covered vast areas of territory, carrying devastation over continents. In this march outward from the nidus of development, pushing onward by somewhat regular yet occasionally interrupted stages, the army worm resembled an epidemic of disease in its mode of approach to a place, its gradual attainment to an acme of destructiveness, and its final abatement. Thus, the army-worm millers indigenous to certain marshy lands of the South, in the year 1861, sallied from their haunts in illimitable swarms and deposited their eggs in suitable places and at a suitable period of the growth of early vegetation in every county from the Gulf to the lakes. These eggs lay dormant until stimulated by the warm weather. Then, apparently, starting from its habitat at the southward, began the northward march of the army worm which overran the country. It was because of the fact of the apparent onward march of the countless hosts of these invaders that they had received the suggestive name of the "army worm," and yet their march was only apparent. They moved only from field to field, like other insects, for the purpose of forage. They advanced northward only as the peach blossom advanced northward; their march kept pace with the increment of heat of the advancing season necessary for the development of the long-deposited eggs. The line of their advance was an isothermal one. Thus the worms, keeping pace with vegetation, appearing when the winter wheat was "in the milk," advanced toward the North slowly, so that they appeared in Maine two months after they were first seen in Missouri. After several weeks the destroying agents disappeared. They had not moved on to other conquests, as people supposed, but the worm, disappearing under the sod, had become a chrysalis, which in a few weeks emitted the miller, that deposited its eggs—and thus was completed the cycle of the insect's life. It had been assumed by some that the whole field devastated had been sown with the germ of the plague the previous season. Observation of the insect indicated, however, that it passed through its phases within a few weeks; and it was probable that the visitation was not thus sown broadcast and at one time, but that the invasion was the gradual encroachments of successive "crops" of the worm. The insects marching northward into Michigan were not contemporaries, but the descendants, by several removes, of those which weeks before had invaded southern Illinois. Thus a brood of worms, disappearing in the northern counties of Mississippi as chrysalides, was represented in a few weeks in middle Tennessee by millers attracted northward in search of early vegetation suitable as nidi for their eggs. The crop of moths from these eggs would in turn deposit their ova in Kentucky, and so the advance northward would be effected—not by the worms, but by that element of the insect floating in the air and endowed with the power of swift flight and with a selective instinct. In regard to the continuance of the recurrence of these insects, it was essential that the several elements should find suitable resting surfaces and conditions of temperature, moisture, etc. In the lack of these, the element might perish, or might remain inactive for an indefinite period, till conditions occurred capable of arousing it to development. Thus, in the latitude of St. Louis, with favorable conditions, two or three broods of the worm were hatched in one season; while in Maine a second brood did not appear. Injury to crops wrought by secondary broods in one locality was comparatively limited. The new worms were preyed upon largely by enemies now come into the field, and material suitable for their sustenance was scarce, in good measure exhausted by the

depredations of their predecessors. Finally the miller of the army worm "wintered over" and deposited its egg at the appearance of vegetation in the spring.

By accident or design, the insect, in any of its phases, could be transported to any distance, and as a miller it might be readily carried by the wind. Dr. Koch, the noted microscopical investigator of the causes of disease, believed that he had discovered the actual entity producing the cholera in a fungoid cell, the "comma bacillus." As yet no more was known of this bacillus than its bare existence. It had a natural history, but the laws of its development and changing growth were yet to be learned. In the absence of such knowledge, we might assume that it had certain phases of development, as the army worm had, and that in each one of these it presented different potentialities. In relation to certain fungoid cells, the fact of such phases of existence was ascertained, and from analogy it might be inferred that the comma bacillus, after a period of active growth, developed into apparently lifeless-formed material, a crystalline substance, bearing, so to speak, the same relation to the cell as coral bore to the insect which formed it. This crystalline substance was not dead but living matter, and, after a period of passivity, under favoring circumstances it put forth buds, which presently burst and emitted into surrounding media a protoplasmic fluid in which in time were developed the cells, thus completing the cycle of changes in the life of the plant.

The peculiarities of the several elements might be thus stated: The crystalline substance, as had been remarked, was in the form of dust, granules, or threads—not an impalpable something, but a material which might be seen with the naked eye and handled with the fingers. Under the microscope it might be seen to form from an aggregation and concretion of cells. From it buds, sprouting, emitted what might be compared to the contents of an egg, a protoplasm, an apparently homogeneous aqueous fluid, in which presently there began to appear dim outlines of cells that gradually grew in size and increased indefinitely, not from cell division, but from the development of a cell from every atom of the protoplasm. The power of this fluid was only exhausted when its ultimate atom had become a cell. The characters of the protoplasm prior to the development of cells would probably elude all efforts at recognition, so that the fluids and tissues of a body containing it might be examined with the highest power of the microscope without the detection of any organic particles.

All parts of the cholera fungus, then, were portable; all were tangible, visible entities, except the infinitely minute atoms of cells in the protoplasm. The entrance of this fluid into the economy impregnated the system with the ultimate germ of the cells, which, under favoring circumstances, developed at the expense of the blood and produced the symptoms known as cholera. The seeds of the disease were brought in the course of travel to a locality as crystalline substance, cholera dust, or protoplasm diffused in the moisture of the air, or water, or in the fluids of the human body, in the form of cells. Under favoring conditions these elements proceeded to perform each its part in nature, so that, sooner or later, after finding a resting-place in a community, they developed protoplasmic fluid which, disseminated by the law of diffusion of fluids in the air and water, or resting as the dew upon articles of food, found its way into the body. The atoms of this poison, infinite in number and pervading large areas of space, were received into the system of all, like the pernicious miasm of the marshes. The blood, acting as other fluids had been observed to act when impregnated with fungi, resisted the changes which it was the destiny of the foreign agents to effect until the number of the invaders, or some changes in the vitality or chemistry of the impregnated

fluid, made longer resistance impossible, and an explosion of the disease, like a paroxysm of pernicious fever, resulted. The ejecta from the first cases, filled as they were with cholera-cells, found their way generally to a favoring soil, and developed within a few hours succeeding phases of the fungus. Thus crop after crop of cholera atoms were begotten in a prodigiously increasing progression, to extend the area of infection and increase the malignancy of the disease. It might happen that the germs of cholera introduced into a locality found circumstances unfavorable for their development at the time; and, although the seeds of the disease might be pretty generally sown, they would lie dormant for a season.

There were certain known facts regarding the cholera which at least lent plausibility to the theory that the germ might be implanted in a district long in advance of the actual appearance of the disease. Such, certainly, was the case when the cholera "wintered over," as it was said, lay inactive, it might be, through the autumn, winter, and spring, to rise into activity the following summer. It had long been noticed that an epidemic of cholera was often preceded for weeks by the influenza, and a marked and general tendency to diarrhoea. The reasonable assumption that both the forerunning ailments and the succeeding disease were the effects of a common cause would imply the presence of the germ of cholera in a locality long before the actual outbreak of the epidemic. The march of the pestilence, though generally in the track of travel, was sometimes singularly abnormal as to this law. The cholera sometimes sprang up in places far out of the line of apparent exposure. These variations and exceptions to the general law of portability of the disease suggested a possibility of the truth of the theory that it might be primarily sown as a temporarily inactive dust, as well as implanted as a speedily developing protoplasm. It might be that, in attempting to trace the origin of the disease by noting in any locality the first case, we erred in this, that we compared the course of the epidemic with the line of travel in the presence of the attack, when possibly it was the course of the traveler from the infected district of last year to which attention should be given. The irregularity as to the time and place of appearance might be further referred to the varying soil and temperature of the respective localities considered as developing agents of the deposited germs.

It would be noted that there had been here set forth two theories as to the mode of advance of cholera: the one, that it advanced in successive crops from a first or isolated case; the other, that the seeds were sown broadcast over the countries elected for visitation, and that these were developed as favorable conditions arose. The number of cycles which the cholera germ might undergo in a season varied probably with the locality, temperature, etc.—conditions which determined the severity of the epidemic and the length of its stay in a place. Thus, at St. Louis, the number of its cycles might be threefold greater than at Bangor; and a variation in the time of the cycle, also, might influence the rate of advance of the disease.

Changes in the blood effected by the protoplasmic atoms in their act of development into cells alone produced the cholera; the presence of cells which had already completed their growth, or the material formed from them, cholera dust, did not directly induce the disease. Thus rice-water discharges abounding with the comma bacillus might be drunk without injury. The subsequent deposit of these cells in the ejecta of the experimenter might, however, lead to an outbreak of the disease of which he might prove the first victim.

One of the most singular laws of the cholera was this, that, with rare exceptions, it marched *onward*. It remained active in a place a number of weeks and subsided, and the places next attacked were *beyond*, relatively to the starting-point, the dis-

trict last devastated. In the case of the army worm also this was the fact; and, in regard to the march of the insect, we can plainly discern the laws, whether it was held that the eggs had been all deposited by the same army of moths, or by successive broods of them. In the one case, as the writer supposed, the millers, finding the fields of favorable deposit "pre-empted," passed onward to unoccupied territory. In the other, because of the devastation made by the preceding generation, the millers of the present must instinctively move onward in search of proper resting-places for their eggs.

Now, as the army worm moved onward by instinctive selection, might it not be possible that the cholera fungus advanced by a *vis a fronte*—a species of chemico-vital affinity—a diffusion in the direction of affinities not yet exhausted, just as the small-pox virus dwelt in a community till its affinities for all were expended, and then moved onward in the direction of the unprotected?

To the student of cholera the parallel furnished by the army worm as to the convection of its elements, and the possibilities and proper times and methods of quarantining against them, was suggestive.

Means by which man might "stamp out," or keep out, the myriads of army worms which sometimes in a few hours filled to the brim the cordons of ditches plowed about the grain-fields, and changed in an equally short time flourishing acres of wheat into a "marble ground," could hardly be devised. Plans by which he might unearth and devitalize chrysalides, planted under every sod from Georgia to Maine, were difficult to imagine. Methods by which he might successfully contend against the innumerable moths filling the air, might discover and destroy the numberless eggs deposited in every meadow on the continent, were inconceivable.

How infinitely more difficult to avoid, or to antagonize, were the minute cells, the every-way and everywhere portable dust, and the invisible, intangible, miasmatic atoms of the cholera!

And yet the farmers actually did antagonize their protean plague in all its phases, and with a fair measure of success. They quarantined against the ever-coming and ever-increasing countless millions of worms. They energetically and persistently worked to keep off from yet uninvaded fields, by means of a cordon, mechanical and chemical, all possible insects; they plowed under and deeply buried, in order to destroy, the chrysalides known to have formed; they attempted to entrap and destroy the millers by cordons of lights, and they burned the grass where the eggs were deposited.

The principles of quarantine against the cholera suggested by the theory of the disease here presented might be summed up in the following propositions:

Elements of the disease known to exist might be isolated or destroyed.

Places suitable for the development of the elements might be rendered unsuitable.

Ingesta, possibly contaminated by the cholera poison, might be avoided.

Badly infected districts might be evacuated.

According to this theory, during an epidemic the poison lurked in the individual. In the blood of an exposed person there were two contending forces—the one the resistance of the vital fluids to the changes attempted to be made by the invading atoms, the other the efforts of the latter to appropriate from the blood materials for their own growth.

One of the first evidences of the yielding of the forces contending for the integrity of the blood was loss of serum. The one important event in the chemical change in the blood necessary to give the victory to the ferment (invading atoms) was loss of its serum. Speaking figuratively, serum was the essen-

tial ally of the blood in its resistance to the invaders. The ejection of ever so little of this tended to render the ejection of other portions easier, and to give the final victory to the poison.

Now, while no prophylactic measures were known, it was most fortunate for mankind that remedies were at hand which, if applied in season, might, unless the assault of the ferment was overwhelming, arrest the flow of serum and re-enforce the blood in its resistance to the infection.

Even when the cholera had held full sway, when it had run its course without interference, it was not necessarily fatal, either because the dose of the poison had been insufficient to destroy, or because in some life might continue after the virus had done its worst.

The secondary reactionary conditions following the collapse, known as the typhoid state, were complicated phenomena. They were expressions of the efforts of the system in its struggles with the resultants of the cholera paroxysm, rather than a proper stage of the disease. They bore a relation to cholera which might be compared to that which surgical fever bore to the injuries which caused it.

This theory of the presence of the germ of disease in the system of all involved the recognition of the principle of acclimatization in this disorder. One might become by gradual inurement habituated to the presence of the virus, and perhaps the majority so inured were able completely to resist it. As in yellow fever, however, the acclimatization might be speedily lost. Persons whose systems had not thus become acclimated to the poison might be, upon sudden exposure, stricken down with violence.

[The paper provoked much discussion and inquiry, which, on account of limited space, we are obliged to omit.]

LISTON H. MONTGOMERY, M. D., *Secretary.*

Reports on the Progress of Medicine.

ANATOMY AND PHYSIOLOGY.

By GREME M. HAMMOND, M. D.

The Effects of Premature Synostosis of the Cranium.—Dr. E. Zuckerkandl's fourth contribution ("Med. Jahrbücher," 1883) on the subject of the anatomy of the human body is occupied with a discussion of the influence of ostosis of the cranial sutures and the formation of the skull upon the direction of the convolutions of the brain. Meyer, Meynert, and Rüdinger have demonstrated that there is a certain and constant relation between the shape of the skull and the direction of the convolutions of the brain; that the convolutions of a brain contained in a dolichocephalic skull run more in a sagittal direction, and that when the skull is brachycephalic the direction of the convolutions is more frontal. Zuckerkandl concluded that, if these views were correct, the normal direction of the convolutions might be altered through other influences, such as, for instance, the premature ostosis of the cranial sutures. He therefore collected six cases, from which the following observations were obtained:

CASE I.—The skull was abnormally long, and premature ostosis of the sagittal suture existed. The brain was elongated and narrow. The orbital lobes were peculiarly formed in both hemispheres. They were bent downward and pressed against a corresponding part of the temporal lobe. The frontal lobes were elongated, and their convolutions extended in a sagittal direction.

CASE II.—The brain was taken from a scaphocephalic skull.

The frontal lobes were wide at the base but narrow toward their anterior extremity, and their convolutions, packed closely together, ran in a sagittal direction.

CASE III.—The brain was taken from a dolicho-acrocephalic skull in which premature ostosis of the sagittal and coronal sutures had occurred. The shape of the brain was acrocephalic. The frontal lobes were small, especially in the orbital region, and were bent upward. The gyrus rectus was drawn out in both hemispheres in the shape of a beak. On the convex surface of the brain the convolutions of the frontal lobes were very narrow. The temporal lobes were short and thick, and their convolutions broad and massive. The anterior portion of the gyrus occipito-temporalis lateralis protruded above the surface of the brain.

CASE IV.—The brain was taken from an acrocephalic skull in which premature ostosis of the frontal suture had occurred. The orbital lobes were similar to those mentioned in the preceding case. The frontal lobes were small, and the temporal lobes broad and full. The occipital lobes were bent downward and sloped to a point.

CASE V.—The brain was taken from a dolicho-acrocephalic skull in which premature ostosis of the sagittal and coronal sutures had occurred. The brain was elongated, and tapered to a point posteriorly. The orbital lobes were somewhat misshapen. The frontal lobes were small, with numerous convolutions, and the occipital lobes bent downward.

CASE VI.—The brain was removed from a dolicho-acrocephalic skull in which premature ostosis of the sagittal and coronal sutures had occurred. The brain was a little longer and more pointed, posteriorly, than the one mentioned in the preceding case, but the malformation of the orbital lobe was not so apparent. The frontal convolutions were small and tortuous. On the left side the middle convolution of the temporal lobe projected above the level of those adjacent to it. The gyrus fornicatus, gyrus fusiformis, and gyrus temporalis superior were strongly marked and projected above the rest of the misshapen lobe. The cuneus was small on both sides.

Zuckerkandl concludes, from these cases, that the brain does not always correspond in shape to the form of the deformed skull. That in elongated skulls the frontal lobes are small, their convolutions narrow and pressed together; the temporal lobes are massive, and project above the surface of the rest of the brain. In premature ostosis of the sutures in a dolichocephalic skull, the convolutions, especially in the frontal lobes, run in a sagittal direction.

On the Coagulation of the Blood.—Dr. L. C. Wooldridge ("Journal of Physiology," Feb., 1884) continues the subject of the influence of lecithin in producing coagulation of the blood. In former experiments peptone plasma was used. In the present case he made use of blood which had been prevented from coagulating by being, immediately after leaving the body, cooled down to a temperature of 0°. Coagulation of the blood is brought about by a certain interaction of the white corpuscles and the plasma. By rapid cooling, this interaction is suppressed, and hence the blood does not coagulate. But, if one of the substances of which the white cells are made up be diffused through the cooled blood, coagulation does occur. This substance is lecithin. The method of experimenting is as follows: The blood is taken from a large artery and flows into two thin metal tubes of about half an inch diameter. The tubes stand in large vessels filled with broken ice and a little water. Each tube holds 40 c. c. One contains 15 c. c. of .6 per cent. NaCl solution, the other a similar quantity of normal salt solution through which finely emulsified lecithin is diffused. Numerous experiments performed in this manner showed that the blood in the tube containing the lecithin was coagulated in ten or twenty

minutes, while the blood in the tube containing only the salt solution showed no signs of coagulation even after standing one hour. The lecithin used was prepared from lymph-glands. It had a slightly acid reaction, and was not perfectly pure. It was rubbed up with a drop or two of dilute Na_2CO_3 solution to a paste, and then diffused through the salt solution.

The Motor and Inhibitory Nerves of the Rectum.—Dr. Leopold Fullner ("Med. Jahrbücher," 1893) has lately made some very interesting experiments which show conclusively that the rectum is supplied with both motor and inhibitory nerves. His method of procedure was to fix a hook securely to the lower portion of the rectum, and then, by means of a double ligature, cut through the rectal tissue one centimetre below the point of fixation. To this hook a cord was fastened, which, passing over a pulley, communicated with the lever of Bach's recording cylinder, the tracing lever of which registered each contraction of the rectum on the revolving drum of Balzer's kymograph. Dr. Fullner, after having performed a great number of experiments, arrives at the following conclusions:

1. The motor nerves of both systems of muscular fibers, the longitudinal and the circular, run in separate channels. The motor nerves for the longitudinal fibers are known as the "nervus erigens." They arise in the sacral plexus and are lost in the hypogastric plexus. The motor nerves for the circular system lie in one of the descending pairs of nerves of the posterior mesenteric ganglion. They are known as the hypogastric nerves, and are likewise traced to the hypogastric plexus.

2. The rectum possesses two different kinds of inhibitory nerves, one controlling the longitudinal fibers, the other the circular fibers.

3. These inhibitory nerves also run in different channels, but finally each inhibitory nerve forms a common trunk with a motor nerve supplying the antagonistic muscular system, so that the nerves descending from the sacral plexus are not only motor nerves for the longitudinal muscular system, but are at the same time inhibitory nerves for the circular fibers, and the nerves springing from the posterior mesenteric ganglion carry inhibitory impulses to the longitudinal fibers, and at the same time are motor nerves for the circular system.

4. By this arrangement it is possible that, at the same moment when motor impulses are generated in one set of muscular fibers, an inhibitory action may occur in the antagonistic system.

5. In accordance with this, the observations show that during the spontaneous dyspnoic and post-mortem movements of the rectum both systems of fibers do not usually act together, and that the contraction of one set of muscles does not begin before the antagonistic action in the other system ceases.

6. The action of the inhibitory nerves is to lower or abolish the tonus—that is, the contractility of the muscle in question.

7. The effect of electrical irritation of one of the motor nerves shows itself by the suppression of the irritability of the proper inhibitory nerve. It also produces an antagonistic relation between the two nerves of one muscular system.

The Action of Rubidium and Cesium Salts compared with the Action of Potassium Salts on the Ventricle of the Frog's Heart.—The close chemical relationship between potassium, rubidium, and cesium has led Dr. Sydney Ringer ("Journal of Physiology," Feb., 1884) to investigate the degree of physiological correspondence between rubidium and cesium on the one hand and potassium on the other. The experiments were made with the ventricle of the frog's heart attached to a perfusion cannula by a ligature placed as nearly as possible in the auriculo-ventricular groove. Artificial circulation was maintained through the ventricle by a siphon action. The contractions of the ventricle were recorded upon Roy's tonometer.

"It is necessary," says Dr. Ringer, "to preface the experiments with rubidium and cesium with a brief statement of the physiological action of potassium on the frog's heart."

When the circulating fluid supplied to the detached ventricle consists of a simple saline solution, the contractility first grows weak and then gradually recovers itself. A physiological dose of potassium chloride prevents this recovery.

When the ventricle is fed with a saline solution containing a physiological quantity of a lime salt, diastolic dilatation is much retarded. A potassium salt accelerates this dilatation.

Sodium carbonate and sodium bicarbonate added to the saline solution broaden and cause much fusion of the beats, and induce tonic contraction. Potassium chloride obviates all these effects.

With a blood mixture (dried bullock's blood dissolved so as to imitate fresh blood, and diluted with two parts of a saline solution made with tap-water), potassium salts greatly prolong the latent period and the period of diminished excitability, and lessen the frequency with which contractions can be excited by electricity.

With the blood mixture, faradization induces tetanus, but, when a potassium salt is added, faradization arrests the contractions, which recommence on discontinuing the faradization.

Potassium salts arrest the ventricle in diastole.

A number of experiments which were performed demonstrate that in all the foregoing particulars the action of rubidium corresponds exactly to the action of potassium. The case is far different with cesium, the physiological action of this metal being more like that of barium and strontium. Two hundred c. c. of saline solution containing 2 c. c. of 1.685-per-cent. solution of cesium chloride soon broadened the beat and caused tonic contractions. Ten minutes later the beat became greatly broadened, and the ventricle grew weaker and weaker till at last contraction almost ceased.

Under the influence of cesium chloride, faradization does not inhibit the cardiac contractility. In its physiological action cesium chloride only corresponds to potassium chloride in two respects: both obviate the delay in dilatation caused by calcium salts, and both increase the period of diminished excitability and so prevent tetanus from continuous faradization.

Experiments upon the Ears of Fishes, with reference to the Function of Equilibrium.—Dr. Henry Sewell (*Ibid.*), thinking that fishes were better fitted than any terrestrial animal for giving an experimental solution of the problem concerning the relation of the semicircular canals to the equilibrium sense, has performed over ninety experiments upon sharks and skates, removing different portions of the auditory tract and noting carefully the effects produced by the different operations. When, in a shark, either or all of the semicircular canals on one side only are cut through, the results are wholly negative—that is, the animal swims in the same manner as when uninjured. The same want of positive effect succeeds section of the two vertical canals on both sides, both in the shark and in the skate. Each of the six canals of both shark and skate has been individually severed, with uniformly negative results. In another shark, in addition to the foregoing operation, the canal of communication between the utricle and the sacculus was carefully cut open on each side without effect. By this procedure the sacculi, with the ampullæ of the anterior vertical and horizontal canals, were completely sundered as channels from the rest of the labyrinth. Laceration of the vestibular sacs and the removal of the otoliths from them was occasionally not productive of any change in the behavior of either shark or skate; but, on the other hand, the same treatment was often followed by quite definite results. On removing the otoliths on one side, there was usually a tendency to swim downward in a circle toward the side operated on, and, after the otoliths had been removed from both sides,

the animal dived downward and occasionally turned somersaults in a vertical plane.

When the sacculus is opened on one side there is an immediate tendency to dive more abruptly than usual, and to turn round the long axis of the body toward the injured side. When both sacculi are cut, the lateral motion becomes converted into a series of somersaults. When, in addition, the otoliths are drawn from each sacculus, the skate swims round and round in a vertical plane, in a circle two or three feet in diameter. This motion was sometimes continued for several days. When the ampullæ of the anterior, vertical, and horizontal canals were cut into or excised, disturbances of equilibrium were noticed in small sharks. The character of the movements is not simple, but apparently determined by an effort to swim in more than one plane at the same time. The large sharks seemed to suffer very slight disturbance of equilibrium even after severe lesions of the labyrinth.

Reflex effects upon the eyes and other organs were observed to follow irritation of the labyrinth. When the nerve attached to the ampulla was touched, active jerking of both eyes occurred. Slight mechanical irritation of the ampullæ had the same effect. Stimulation of the vestibular sacs, especially the removal of the otoliths from them, produced violent nystagmus. Irritation of the ampullæ and their nerves was frequently followed by vomiting.

Miscellany.

Water and its Impurities.—In an exceedingly interesting address before the Medical Society of the County of Schenectady, by the vice-president, Dr. H. V. Hull ("Medical Annals," Aug., 1884), we find the following:

"Water is greatly influenced by the nature and quality of the soil it passes through, irrespective of the mineral substances it may take up, and even rain water in its passage through the air from the clouds to the earth will absorb carbonic acid, ammonia and other salts, and will entangle with itself particles of soot from smoke, dust, and even minute germs floating in the air. In fact, rain water will usually contain two or three grains of solid matter in each gallon. River water, while it may be soft, is nearly always impregnated with decayed vegetable matter, and, if in thickly peopled districts, is quite apt to hold sewage in solution, which renders it highly dangerous to life and health. It is generally believed that our rivers may receive the contents of sewers, but, through the influence of plant and animal life, the water may undergo a complete chemical oxidation, and, in running water that has flowed ten or fifteen (some say but two or three) miles, all evidence of contamination may disappear. If this is true, it is a dangerous truth.

"Water may be clear, sparkling, and bright, and yet contain a large amount of impurity. The earthy salts which are so often found in solution in water are of no particular importance when compared with the organic matter which it may contain. The nearest approach to pure water is found in deep wells with rock bottom, situated a long distance from any source of contamination, and in streams of upland and uncultivated districts. For example, water which shows no deleterious substances on chemical or microscopical examination may still cause disease in those who use it. A suspected well was closed by a local board of health. The families who were inconvenienced by its closure demanded that they should either be allowed to use the water or else convincing proof should be furnished that the use of it was dangerous to health. The most carefully conducted chemical and microscopical examination gave a negative result. The board of health then made a house-to-house inspection, with the result of finding twenty-three cases of typhoid fever among two hundred and nineteen persons in families who habitually used the water from the suspected well. In the same portion of the town there were two hundred and seventy-one persons

who used other water, and among these persons there had been but ten cases of illness of any sort during that season, and of these diseases there were but two cases of typhoid fever. This report could lead to but one conclusion. After closing the well there were no more cases of typhoid fever in that neighborhood than in any other part of the town.

"This instance proves that nothing short of a physiological test, in the form of typhoid fever or some other zymotic disease, can convince the public that water may be clear and bright, have no unpleasant taste, and give almost a negative result on chemical examination, and at the same time be filthy and fatally poisonous.

"Water may present nothing offensive or unusual to the eye, may be clear and without sediment, and have a disagreeable or disgusting odor or taste, which a chemical or microscopical examination can not explain, and yet be used for domestic purposes without causing any noticeable increase of sickness.

"The sources of organic impurity are two—animal and vegetable, of which the former is far the more injurious.

"The use of water which has passed through swamps, and thus contains great quantities of vegetable matter, though not advisable without thorough filtration, is far preferable to the clear, sparkling water from a well contaminated by sewage. The stomach and bowels may be disturbed by swamp water, but there will not be those fatal results which attend sewage poisoning.

"During seasons of abundant rain, when the springs and wells are all filled, poisonous substances of all kinds are largely diluted, and are not so active in causing illness as in seasons of drought and low water, when whatever there is of poisonous substances in the water becomes more concentrated and thus more dangerous to life and health. In the autumn of 1881 a protracted drought was coincident with prevalence of typhoid fever in this locality."

The Purification of Water.—In the same address Dr. Hull said: "Without advocating the selection of confessedly impure waters and attempting to purify them, yet, under some circumstances, it is necessary to advise methods of purifying water. The chief methods adopted are distillation, boiling, subsidence, and filtration.

"Distillation is conversion of water into vapor and its recondensation by cooling, the impurities being left behind. The water by this means is produced in its purest state. It is, though bright to the eye, not palatable, but it is indispensable for chemical and medicinal purposes. On a large scale fresh water is now distilled from sea water for the use of ships, especially in long voyages.

"Boiling is requisite to destroy minute organisms and germs. From the researches of Dr. Dollinger and others we have proof that the thermal death point of most forms of bacteria is about 55° C. (120° F.), though some species have lived at a temperature somewhat above this point. After being boiled, the water should be exposed to the air for a time to absorb again a portion of oxygen and carbonic acid.

"Subsidence permits the settling down of impurities. By the exposure to air water is much softened, and the settling-bed thus serves two ends.

"Filtration is far the most important means, from a sanitary point of view, and is the favorite method for purifying water for use. Filtration is carried on on a very large scale by those water companies which supply large cities, and their filtering beds are elaborately prepared. Filtration on a small scale is now the rule in most well-regulated households, and private manipulation is not usually superfluous with the best water supplied by any company. The chief materials used in the construction of filters for private families are animal charcoal, silicated carbon, carbide of iron, spongy iron, and sand. Vegetable charcoal is also used to some extent, especially in the construction of cheap filters for domestic use. It is not considered so good a material for this purpose as animal charcoal, as the latter greatly exceeds the former in its power as a disinfectant. When animal charcoal is used, it must be specially prepared and well burned. If any of the animal matter be left in it, it becomes (as shown by a report of the London River Pollution Commissioners) a breeding place for myriads of small worms, which pass into the water. With the other materials mentioned as are made of burnt shale, or, as is the case with the carbide of iron, taken from the interior of blast furnaces, there is, of course, no risk of this.

"Of all forms of domestic filter the glass decanter with a solid carbon or silicated carbon block seems to answer most of the requirements of an efficient, uncomplicated filter for family use. It has also the great advantage that every part of it can be seen, so that it can be kept scrupulously clean. These filters go on working perfectly well for a very long time, requiring scarcely any care beyond cleansing the surface of the block of carbon occasionally with a hard brush. Filters, however, like most things, will not go on working for ever, and attention from time to time is necessary. Says a distinguished authority on this matter: 'All filters, after a time, become clogged up, and have, therefore, to be taken to pieces and thoroughly cleaned; or, if this can not easily be done, they may be purified by passing through them a strong solution of potassium permanganate, with the addition of a few drops of strong sulphuric acid, and afterward two or three gallons of pure or distilled water, acidulated with hydrochloric acid. The charcoal in a filter may also be purified, to a certain extent, by exposing it for some time to the sun and air or by heating it in an oven or furnace'; though it is always far the better plan to replace the old charcoal with that which has been freshly burned. In case of a cistern which is built so as to allow all the water it receives to pass through a filtering medium, the material of which the filter is composed—usually pebbles, sand, and charcoal—should be taken out, the pebbles and sand well washed, and the charcoal replaced by some which is fresh. This should be done certainly as often as every two or three years, and the cistern ought to be built in such a manner that this may be done easily.

"At Antwerp, the turbid, polluted water of the river Nethe is 'rendered colorless, bright, palatable, and fit for dietetic and domestic uses' by filtration through spongy iron, and it is the opinion of no less an authority on the subject of water analysis than Professor Frankland that specific living germs are destroyed by this process. This shows conclusively the remarkable power which is possessed by spongy iron to purify polluted water, and perhaps may be taken as an answer to the question of whether it is possible to so improve a suspicious water supply, employed from necessity, as to remove the danger."

The Hygiene of Small Towns.—At a recent meeting of the Kentucky State Sanitary Council, Dr. J. N. McCormack, of Bowling Green, read a paper on this subject, and in the discussion Dr. Dudley S. Reynolds, of Louisville, said: "This is not alone a question as to what shall be done with kitchen slops and human excrements, but equally one of the medium through which the diseases called filth diseases find their way into the system. The people of small towns depend for their water-supply upon wells, springs, and cisterns. It is in those places where spring water is in most common use that cerebro-spinal fever and typhoid disease most frequently occur.

"Sydenham strikes the real cause of the plague that devastated London in 1665-'66 when he explains the character of the drainage and the accumulations of filth that had saturated the soil. His representations correspond exactly with what was observed at Memphis at the time the yellow fever swept away almost the entire resident population of that unfortunate city. It was not believed that Memphis could ever again rise to any importance as a commercial city.

"Colonel Waring, however, devised a system of drainage for Memphis, and took the precautions to make arrangements to prevent the evils of accumulated and decaying filth. It is now no longer looked upon as a fatal spot. Small towns, however, can not afford to build these sewers, and the most effective way that suggests itself to my mind to promote the cleanliness of small towns and avoid accumulations of filth is by legislative enactment, placing the responsibility upon local boards of health in connection with trustees and town councils."

In regard to the filtering of water in cisterns, Dr. Reynolds said: "The great object of sanitation is to prevent the introduction of contaminating material into the system. If a cistern is properly constructed, and the water from roofs properly collected, not permitting the cistern to receive one particle of the first water that falls, and that washes the roofs of houses which collect it, we can conceive how it will be comparatively pure when in the cistern. Some importance, however, should be attached to the means employed to get the water out when once it is properly stored there. Pumps should not reach to the bottom of cisterns, for, when they do, the water drawn each time must be drawn

through the sediment of it all. No matter what system of filtering or straining is employed, poisons, in the form of gas and microscopical bodies, will exist within it. Gases are even more penetrating than microscopical particles."

The Illinois School-Vaccination Order.—The "Fifth Annual Report of the State Board of Health of Illinois," although dated January, 1888, and covering the year 1887, has but lately reached us. It is a volume of more than six hundred pages, consisting largely of tabular matter, and reflects the greatest credit on the industry and carefulness of the board's secretary, Dr. John H. Rauch. It deals chiefly with the work of the board in administering the Medical Practice Act, and with the subject of small-pox and vaccination. Among the great mass of interesting matter given in connection with the latter we find the following:

"Of the total number of enrolled scholars in Illinois in the autumn of 1881, returns and other data in the office of the State Board of Health indicate that considerably less than one half (45.34 per cent.) were protected against small-pox at the date when the vaccination order was issued, requiring children to present satisfactory evidence of proper and successful vaccination before being admitted to the public schools after January 1, 1882.

"Within sixty days thereafter—that is, before the last of February, 1882—nearly 93 per cent. (92.92) of all those in attendance in the State at large had presented this evidence; and, of the remaining fraction, 1.2 per cent. had presented evidence of protection by previous attack of small-pox, or of apparent insusceptibility by repeated unsuccessful vaccination. So that the ratio of protected school children was more than doubled within a few weeks—increased from 45 per cent. to 94 per cent. of all those in attendance.

"These figures, indeed, understate the work accomplished in this brief period, since they do not include over 20 per cent. of revaccinations performed after December 1, 1881. As more than two thirds of these revaccinations proved successful—thus demonstrating the renewed susceptibility of that number—this proportion ($20.88 \times .678 = 14.15$) should be deducted from the 45.34 per cent. classified as protected by vaccination before the date of the order. This would then show that, on the one hand, 68.81 per cent., or more than two thirds of the entire public-school population of Illinois, was susceptible to small-pox on the 1st of December, 1881; and that, on the other hand, there was less than 6 per cent. of unprotected and susceptible remaining among those actually in attendance on the 1st of March, 1882. In other words, that the vaccinal protection of 450,000 public-school children, in round numbers, had been secured within sixty days.

"The foregoing proportions are based upon the returns of 304,586 individual scholars, whose names, ages, sexes, and vaccinal history were forwarded to the State board."

Quarantine between States.—At the recent conference of representatives of the State boards of health of the Gulf States the following resolutions were adopted unanimously:

"Resolved, That there should be an entire harmony and co-operation between the health authorities of the several States.

"Resolved, Every State shall appoint inspectors on all passenger-trains from infected places, and on all steamboats or other river craft on which it may be deemed advisable to have inspectors, to see that the quarantine rules are enforced in good faith.

"Resolved, Every State should have the right to place inspectors of its own at points within the jurisdiction of any other State, and upon railroad trains and river boats within the limits of such jurisdiction. Inspectors coming under this head should be allowed all reasonable facilities for obtaining information and for the transmission of the same, and should comply with the quarantine regulations of the State or locality in which they are acting.

"As to local or municipal quarantine: yellow fever or cholera having been introduced into any community, particularly into any city or town, earnest efforts should be made to confine the disease within the smallest limits, that is to say, to prevent its dissemination through the community. To this end the infected house or locality should be rigorously isolated, and disinfection should be employed according to the most improved methods."

Original Communications.

REMOTE PUERPERAL HÆMORRHAGE.*

By T. GAILLARD THOMAS, M. D.,

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SINCE I last attended a meeting of the society I have met with two cases which have suggested to my mind the considerations which form the basis of what I am about to say. I refer to a form of hæmorrhage which comes on three weeks or a month after labor, after the physician has ceased making his visits. Some years ago the late Dr. McClintock, of Dublin, wrote a paper on this subject, and called it "remote or delayed puerperal hæmorrhage," and Dr. Mundé has recently written an article bearing upon the same point, published in the "American Journal of Obstetrics." I have seen a good many of these cases, and the history of one which I will relate illustrates the experience that I have had with most of them.

In such a case the uterus may have contracted after labor, and everything have gone on properly until the ninth day, when the physician has ceased to make his daily visits, but from that time the woman begins to lose blood steadily. If she makes a little unusual effort, or if anything occurs in the family to cause considerable mental excitement, an exceedingly dangerous hæmorrhage may take place, which will require to be checked with the tampon. If sudden and profuse hæmorrhage does not occur, demanding the services of a physician immediately, a steady loss of blood in moderate amount may continue for a week or ten days, until the woman becomes very much exhausted.

The particular case of which I have had the history in mind in the foregoing remarks was that of a lady to whom I was called in consultation by a German physician of considerable experience. Ten months before, the patient had called at my office, and had given a somewhat peculiar history. She had been married for several years, her husband was a vigorous, healthy man in every respect, and she a remarkably handsome and well-formed woman; and yet no intercourse had ever occurred. On examination, it was found that she was suffering from a very aggravated form of vaginismus. Her husband had exhausted all his efforts, and her mental state had become such that she could not entertain the thought of sexual intercourse. An operation was performed, at the end of a month the patient left the hospital, and just nine months later she was delivered of a child. About the end of the seventh month of gestation the veins leading from each labium majus became greatly enlarged, and the parts presented the appearance of a mass of earth-worms of the size of one's fist. I had seen the condition in so marked a degree but once or twice before.

On the ninth day after delivery hæmorrhage occurred, and she sent for her physician, who used all the ordinary means, including ergot, tannic acid, dilute sulphuric acid, etc., for stopping it, but without avail. The tampon, however, was not resorted to. About three weeks after her delivery the patient

was seized with very profuse and violent hæmorrhage, which reduced her very much. It came on after she had got out of bed. When her physician reached her the hæmorrhage had ceased. Each time it had begun with the passage of a large blood-clot. On this occasion I was consulted, and I visited the patient three days later—the next time that hæmorrhage occurred. I took with me a nurse and instruments for dilating the uterine canal and for removing the remains of membranes. Her physician, however, felt very positive that none of the membranes had been left in the uterus, and stated that he had examined the placenta very carefully, and that there was no interruption of its continuity whatever. But I felt equally positive that some of the placenta yet remained in the uterus.

When the patient had been placed on the table and the ether-cone had been applied over her mouth, she suddenly sprang up in a state of wild excitement, and could not be induced to continue the inhalation of the ether, it had affected her so badly when she was operated upon for vaginismus. All means of persuasion were futile, and her friends desired that she should be compelled to take the anæsthetic. But I objected to compulsion, because, under such circumstances, after delivery, I have seen most violent and uncontrollable mania developed. In one instance the mania continued three weeks, during which time the patient was very violent, and had to be watched constantly by a nurse. It is true, the mania seemed to be of an hysterical nature, but, nevertheless, it was very violent. I think we can not be too careful as to doing that which is strongly opposed to the will of a puerperal woman. I would rather have run the risk of a violent hæmorrhage in this case than have forced the patient to take the ether. She was spoken to kindly and put back into bed, and I assured her husband that she would send for me again within twenty-four hours, to have the operation done.

I was sent for the next day. The patient was then etherized, the uterine canal was dilated, the curette was passed, and three pieces of placenta were removed, each as large as the last phalax of one's index-finger. Very little hæmorrhage was excited by the operation, and I felt that in removing the pieces of placenta I had removed the cause of the hæmorrhage.

The points I wish to make are these. The case was an interesting one: 1, with regard to the vaginismus; 2, with reference to the condition of the veins of the vulva; 3, with reference to the great danger of giving ether during a state of maniacal excitement; 4, with reference to what I believe to be the usual cause of delayed puerperal hæmorrhage and the proper means for its cure.

With regard to the statement, so often made, that the placenta has been examined carefully and found entire, it usually amounts to nothing. In the first place, we know that the physician commonly looks at the after-birth hastily and in a careless manner. Besides, I believe that little pieces may be broken off and remain behind, which no man could recognize from an examination of the placenta, though he examined it with the utmost care. As in this case, so in all others of delayed puerperal hæmorrhage that I have met with, it has been due to retained placenta or membranes. Dr. McClintock mentioned a case in his practice which, I believe, proved fatal. I have met with some which very nearly proved fatal, and doubtless some of those present have encountered similar cases.

* Remarks made before the New York Obstetrical Society, April 15, 1884.

SOME RECENT ADVANCES IN METHODS OF WOUND TREATMENT.*

BY LEWIS S. PILCHER, M. D.,
BROOKLYN.

RATIONAL methods of treatment command permanent acceptance according to the perfection with which they carry out recognized principles. All the advances in the treatment of wounds which the present day is witnessing are based upon the one idea that the essential agents by which disturbances in the healing of wounds are excited are minute organisms, the germs of which are conveyed from without, either by the body that produces the wound, or from the air that gains access to it, or from something that comes in contact with it, whether it be the hands of the person that binds up the wound, or the appliances that he may use. The methods and appliances, therefore, which I wish to call attention to at this time depend for their merit either on their power of excluding such micro-organisms, or of limiting their activity, as in the case of the materials for dressings to be described, or on the facility with which they may be prevented from becoming the carriers of contamination, as in the case of the instruments and appliances. What I have to say will be arranged under the three heads of

1. Aseptic instruments.
2. Buried or layer sutures.
3. Absorbent dressings.

1. *Aseptic Instruments.*—From the standpoint of a possible sepsis, every joint, every roughness, every crevice, or angle, or absorbent surface about an instrument, is a source of danger. As example, take an ordinary torsion forceps, or needle forceps, and note the places for the lodgment of impurities underneath the catches, and slides, and springs, and in the crevices of the joint—places into which it is impossible to reach for even the purposes of ordinary cleanliness. The fashion of roughening the handles of scalpels and other instruments to give the fingers of the surgeon a more secure hold; even the stamping upon instruments the name of the maker—these produce objectionable depressions that make absolute cleanliness more difficult. The appreciation of the importance of these considerations is creating a new standard for instruments, which is characterized by the utmost simplicity of model, and plainness and smoothness of finish. The manufacture of instruments out of a single piece of metal, without joint or seam of any kind, is the highest type of this new standard. Where joints are unavoidable, the adoption, whenever possible, of the French joint, as it is called, which permits the parts to be easily unjointed and separated for purposes of cleansing, is another feature of this new standard. Already in the instrument-shops are beginning to appear instruments in the manufacture of which these considerations have been regarded. The instrument-makers of Germany have taken the lead in this direction, this being the natural outcome of the scientific precision which marks the work of the surgeons of that

nationality in their precautions against septic contamination of the wounds they make or have to deal with.

As an illustration of the possibility of applying these principles to comparatively complicated instruments, take the case of the "Russian" needle-holder, which, in its original model, notwithstanding its convenience in use, merits all the objections that have earlier been urged against instruments that can not be perfectly cleaned. Yet, in this modified instrument which I show you, and which has been constructed at my suggestion by Mr. Pfarre, of Tiemann & Co., all its objectionable features have been overcome, while it still remains practically the same instrument. One of its most objectionable features—the spring between the shanks of the handles, that was designed to automatically separate them—has been dropped as practically superfluous. The handles are of smooth vulcanized rubber, and, having been baked upon the metal in the course of manufacture, present neither crevice nor joint, and are so intimately incorporated with the metal portion of the instrument as to form practically a single piece. The catch is made so that it can be detached by a few turns of a thumb-screw, by which it is held in place, and, finally, the blades are joined by the "French joint," already alluded to, which permits them to be readily separated from each other. Thus the instrument can be easily and quickly taken apart, and the most perfect cleansing of every portion readily accomplished. One objection is to be made, however, to this particular instrument, and that is the fact that the manufacturer's name has been stamped on it. This creates an unnecessary source of trouble in the cleansing, which might properly be objected to by the scrupulous surgeon.

Let me call your attention to one more instrument illustrating this phase of the subject. Note the construction of so common and simple an instrument as the ordinary anatomical or dressing forceps. The two pieces that constitute the blades are welded together, so that the approaching blades form a very acute angle, into the apex of which it is exceedingly difficult, nay, even impossible, to reach with anything to cleanse it, and in the usual attempts at cleansing the instrument there is always left a region where more or less objectionable material necessarily remains. In addition, the outer surfaces of the blades are generally roughened, in order to give the surgeon a firmer hold and better control of the instrument. But here I present a pair of anatomical forceps which, by one or two apparently trivial modifications, is freed from the objections noted. The acute angle has been filled up with a bit of metal, welded into its place, and the surface which it presents between the divergent blades can be readily reached and thoroughly cleaned. Then the roughening of the blades has been done away with, and a smooth and polished surface everywhere secured, except at the tips of the blades, where a certain amount of serration is required to give the forceps a sure grip upon the tissues it may seize.

As examples of the class of instruments which have been described, and which I have termed "aseptic," I present for examination a large variety, including different models of hæmostatic forceps, hook-retractors, sharp spoons or curettes, scalpels, dressing-forceps, amputating-knives and saws,

* Remarks made before the Medical Society of the County of Kings, July 15, 1884.

chisels, gouges, drills, etc. These are all either made from one piece of metal, or have had their parts soldered together so as to leave no crevice, angle, or depression for the retention of septic matter. These are samples from quite a number of different German instrument-makers.

Of like excellence, from the standpoint of asepticity, is another series of instruments, which I also present for examination, in which, as in the case of the needle-holder already shown, the handles are made of smooth and polished hard rubber, the rubber having become intimately incorporated with the metallic part of the instrument by having been baked upon it in the process of vulcanization. These have been made by Tiemann & Co., at the suggestion of Professor J. A. Wyeth. The result of the attempt has been to produce a very handsome and serviceable as well as "aseptic" class of instruments, the handles of which have the additional merit of being light and not corrodable.

In connection with these instruments, the cases in which they may be kept are worthy of attention. The general considerations, which have been alluded to, that make it important to banish everything in connection with surgical instruments that may harbor dust or resist easy cleansing, will urge us to throw aside the elaborate velvet- and plush-lined cases in which instruments have been wont to be placed, and to replace them with cases of the simplest construction, with racks of metal or polished wood for the support of the instruments. Samples of such cases, which I herewith present, show that, as regards looks, they may be quite the equal of the old styles.

2. Buried or Layer Sutures.—By this term is meant the application of a separate series of sutures to the deeper layers of tissue that may have been involved in a wound. By the use of as many successive layers of such sutures as may be required, all the parts of a wound, however deep, may be brought into absolute and secure apposition, and thus rapid and immediate healing be favored, from the bottom to the surface, as readily as if it had been only a slight superficial wound. As the wound is closed by the successive apposition of one layer of tissue after another, each series of sutures becomes buried, and receives no further attention, being left to the due activity of the tissues for removal by absorption. This buried or layer suture requires for its safe use a reliable article of catgut—one that the surgeon may be sure never to hear from again by reason of any irritation produced by it after it has been covered up from sight. Such a catgut can be very readily and quickly prepared from any ordinarily fair specimen of gut by immersing it in a watery solution of corrosive sublimate (1-1,000) for forty-eight hours, and afterward keeping it in an alcoholic solution of the sublimate of like strength until it is required for use.

This method of using sutures is a natural development from their use as ligatures, in which case it has become the habit to cut the threads off short and abandon (that is, bury) them in the tissues when the external wound is closed. The earlier employment of the buried suture was in attempts at the radical cure of hernia, and in certain plastic operations, as the repair of extensive perineal lacerations. It has lately been extended to securing deep apposition of the flaps made

in major amputations, and is susceptible of being applied to many deep fresh wounds. It is a most valuable device for preventing the occurrence of deep cavities in which wound secretions might accumulate. Still, for its safe and successful use, without the accessory aid of drainage-tubes, considerable experience and judgment are required; indeed, for the general practitioner, I should say that the free use of drainage-tubes ought not to be dispensed with, even though the buried sutures were employed.

3. Absorbent Dressings.—In the practical application of antiseptic methods there is no point which is of greater importance than to secure, as an external covering to the wound, some material that shall readily and perfectly soak up whatever discharges may appear upon the surface. The proper apposition of the wound-surfaces having been accomplished, and adequate provision for the escape of the secretions having been made, the next thing is to provide absorbent materials for the external dressings, which themselves must be purified from any matter that might contaminate the wound. The use of carbolated gauze for this purpose is familiar to all as a part of the dressing introduced by Lister. But the eightfold dressing of Lister is quickly soaked through, so that it must be covered with a layer of Macintosh to compel the diffusion of the secretions horizontally over its area, as well as to prevent the escape of the carbolic acid. Saturated as it already is with a solution of resin, it is only the interstices between its fibers that hold the secretions by the power of capillary attraction. It is difficult to prepare, it is expensive, it needs frequent changing, and it so rapidly loses its carbolic acid that it must have been quite recently made to be reliable. For these reasons substitutes for it are greatly needed—indeed, are imperative—if the best results in the treatment of wounds are to be made attainable by general practitioners. With the lapse of time, as the result of much experimenting, it has become apparent that the one great essential in a wound-dressing is its absorbing power. The first important contribution in this direction was the accidental discovery of the value of peat-mold as a wound-dressing by Esmarch in his clinic at Kiel—a discovery which has been followed up with energy by this surgeon and his assistants to the full development of their system of permanent dressings, in which absorbent materials, not necessarily peat-mold, form an essential part. Of the materials which have been used with advantage as absorbent dressings, there are two which, by reason of the energy of their action as absorbents, their cheapness and general availability, and the simplicity of their use, I desire to especially dwell upon in this connection; these are turf-moss and sawdust.

Turf-Moss.—This is the ordinary turf- or marsh-moss, growing in all temperate climates in damp and low places, and especially familiar to us from its use by florists as a bed in which to thrust the stems of flowers and plants, and by nurserymen as a packing about the roots of shrubs and saplings that are to be transported some distance. It answers these purposes by reason of its power of sucking up and retaining moisture. The *Sphagnaceæ*, or turf-mosses, of which there are a number of varieties, have their stems and leaves of a cellular and reticulated structure; a comparatively small

proportion of the cells and spaces entering into their structure are filled with chlorophyll, the greater part of them being empty in the dry state, but rapidly sucking up and swelling out with fluid when brought in contact with moisture, the rapidity of this filling with fluid being facilitated by the existence of numerous perforations, communicating with the external air, that exist in the walls of the cells. This absorbing power eminently fits it for use as a wound-dressing. For this purpose, having been gathered and sorted over to free it from perceptible impurities, it is dried, and is then ready for use. It may be used either in the natural state or after having been first impregnated with some antiseptic, as corrosive sublimate or naphthalin. Unless this latter is done, the moss is likely to develop an unpleasant smell after it has been kept applied to a wound for a week or so. To Leisrink, of Hamburg, is due the credit of having introduced the use of this material, which he did in a communication to the "Berliner klinische Wochenschrift" in the fall of 1882. In the spring of 1883 it was made the subject of a communication to the German Surgical Congress by Hagedorn, of Magdeburg, and at the present time it is almost exclusively used as a wound-dressing in some of the largest clinics of Germany. It is used, made up into pads or cushions of various sizes, by inclosing the dried and prepared moss in bags of coarse gauze, smaller and softer pads, made out of the partly pulverized particles, being used to place directly upon the line of the wound, while larger cushions are applied over these so as to cover an area some distance in every direction from the wound, and, in the case of the limbs, quite encircling them. It answers admirably for purposes of protection and compression by means of its softness and elasticity, as well as for the main object of absorption. I consider it a most valuable addition to the list of wound-dressings, and one which deserves to become popularized in the United States.

Sawdust.—In this cheap and despised material we have likewise a very superior substance for making absorbent wound-dressings. Compared with the other wood preparations that have been introduced—i. e., wood-wool and wood-flour—I think it is to be preferred, for it is practically as absorbent, and is much cheaper and more readily obtained. The fact that as an absorbent it answers all practical purposes, while it can always be obtained, and with little or no expense, leads me to think that it is destined to become the most universally used of all dressing materials in general practice. There was a hope that in absorbent cotton a most desirable and generally available agent for wound-dressings had been found, particularly as it was easily impregnated with various antiseptic substances, but, although unequaled as a protective and compressing agent, it has failed as an absorbent material. My observation is that only a limited layer of the cotton, immediately adjacent to the wound, absorbs, and that this quickly forms a crust which retains the discharges beneath it, or prevents their further escape from the wound. In this way I have been repeatedly disappointed in its use, and balked in my efforts at the drainage of wounds. For this reason I would reject it altogether as an immediate dressing, and reserve it only for external protective purposes. But even here it can be supplanted by

quilted cushions of sawdust at a tithe of the cost. The dust obtained from soft and absorbent woods, as white pine, poplar, or basswood, is desirable if it can be obtained. It should be quite fine, and, if necessary, should be passed through a sieve to separate the coarser particles. It absorbs more readily and evenly if it is a little moist when applied, and for ordinary purposes it may be moistened to advantage with a dilute solution of corrosive sublimate, 1 to 1,000, at the time of using. The corrosive sublimate, of course, soon decomposes when thus mixed with the sawdust, and can not be depended on for maintaining a prolonged aseptic condition of the dressing. For this reason a sawdust dressing, if long retained, after becoming in some degree filled with wound-secretions, will become sour and smell unpleasantly. This may be obviated by mixing in with the sawdust, already dampened with the corrosive sublimate, a small amount of naphthalin, and a dressing so prepared may be retained for a prolonged period without becoming a source of danger or offense.

The sawdust is to be made up into pads or cushions with purified and absorbent gauze. This prepared gauze is simply the ordinary cheese-cloth of the shops, which has been boiled in a dilute solution of caustic soda or of potash for several hours, then repeatedly rinsed, and finally dried. This should finally be immersed for a few minutes in the corrosive-sublimate solution before it is used. With these means pads and cushions of any size may be made from two inches to half a yard square, having a general thickness of about one inch, the sawdust being prevented from shifting by occasional through-and-through stitching or quilting with thread.

Here is a little packet which I have received from Professor Esmarch. It is a sample of what is known as his "first dressing for the wounded on the battle-field." A word on the subject of the treatment of gunshot wounds before I show it. During late years the dangers of meddlesome interference in the case of gunshot wounds have become well understood. It must be accepted as a settled canon of practice of the surgery of to-day that in the case of such wounds immediate disinfection of the apertures of entrance and of exit, if such exist, shall be accomplished, if possible, and that there be no further interference until those symptoms arise that indicate a necessity for it, or until the surroundings admit of the most exact antiseptic precautions being taken throughout, whatever interference is attempted. All probing, therefore, of a bullet track at the beginning of its history is to be esteemed an infraction of good surgery. To provide for the proper immediate dressing of a gunshot wound, Esmarch would have every soldier provided with one of these little packets and instructed in its use. His packet, as originally devised, consisted of a triangular bandage or handkerchief, a long, narrow bandage, folded, with safety-pins for fastening them, and two tampons made of salicylic jute, inclosed in salicylic gauze, the whole protected in an envelope of parchment-paper. But of late, as seen in this sample, the jute of the tampons has been replaced by sawdust which has been treated with corrosive sublimate. I show it here as an example of the use to which sawdust is being put in the matter of wound-dressings,

In conclusion, by way of practical illustration of what may be accomplished by consistent antiseptics, I desire to present for your examination this young man, who, on the 4th of July last, accidentally thrust his arm through a glass door and received thereby a deeply penetrating wound at the junction of the upper and middle forearm. The wound was transverse to the axis of the forearm, and completely severed the belly of the flexor carpi radialis muscle, wounding also the pronator radii teres, and opening up the deep intermuscular spaces, but without injury to any large blood-vessel. He was seen immediately by a neighboring physician, who, as there was then no hæmorrhage, dressed the wound by several points of suture through the skin, and by a firm bandage to the forearm. In the course of the night a general hæmorrhagic oozing from the wound-surfaces began; the stitches that closed the wound externally held firmly, and the blood, denied exit, infiltrated the intermuscular spaces, causing the whole forearm to become greatly swollen, the infiltration extending on the inner side of the arm half way up to the shoulder. The next morning I saw him, and reopened the wound by cutting the sutures that had been applied, and, in addition, enlarged the wound by a long incision down the axis of the forearm from the middle of the original wound. The clots with which the parts were infiltrated were turned out and cleared away as perfectly as possible by scraping with a sharp spoon. A thorough irrigation with a solution of corrosive sublimate, 1-1,250, was then made, the wound was packed with iodoform gauze, and a compress and bandage were applied over all. This dressing was hardly completed before it became evident that there was a peculiar hæmorrhagic condition present in this wound, for through the dressings that had been applied quite a free oozing of thin bloody fluid quickly appeared, and was so marked that I thought best to remove the dressings, and reapply them after a few moments' exposure of the interior of the wound to the air. I then packed it with a purified sponge, thrusting this thoroughly down into the crevices of the deeper parts of the wound, and over this I again applied a tampon of iodoform gauze supported by a bandage. Still the oozing of bloody fluid, percolating through these dressings, continued to such an extent that I did not think it safe to leave it, and, after waiting a few moments, I again removed all the dressings that had been applied and exposed the wound. The bleeding was a general oozing; there was no tendency to coagulation manifested by the blood. At a number of points I now applied catgut ligatures, inclosing small masses of the tissues where the oozing was most profuse, applying also compresses wrung out in quite hot water. Still the oozing was only partially stanchd; I then packed the wound with two sponges, coupled with the iodoform tampon and the compress and bandages as before. By these means the hæmorrhage was finally controlled in great measure, although during the following night there was considerable oozing of bloody serum through these dressings, but no positive hæmorrhage. For two days the dressings were left undisturbed. At the close of the third day I determined to remove the tampons and bring the parts into apposition as far as might be possible. Upon removing the external dressings, I found that already an active process of granula-

tion had been set up, and that the new granulation material had so extended itself into the interstices of the sponges that the sponges could not be removed without tearing the adhesions thus formed. This produced a slight bleeding, which at once ceased spontaneously. The wound was then irrigated with the corrosive-sublimate solution, the wound surfaces were brought together by sutures deeply inserted, and a drainage-tube was inserted to the bottom of the deepest part of the wound cavity. Over all was placed a cushion of sawdust moistened with the corrosive-sublimate solution. On the two following days the saturation of this pad with serous discharges was so marked that each day a new pad was substituted, irrigation of the wound and of the adjacent surfaces being carefully attended to each time. On the third day the drainage-tube was removed and a new pad applied, and on the following day also a fresh pad was applied. This last dressing was made four days ago, and it has not been disturbed since.

It is now the twelfth day since the infliction of the injury, and up to the present time there has been no suppuration from the wound, the discharges having been purely serous. None of the ordinary signs of inflammation have been visible about the wound; but, from the time that it was enlarged, cleared of its clots, and the hæmorrhage checked, its condition has been one of progressive well-being, and this notwithstanding a combination of conditions that afforded good grounds for the gravest apprehensions as to possible diffuse phlegmonous inflammation and prolonged suppuration and tedious recovery.

If you will indulge me, I will now remove the dressings and submit the wound to your inspection. The parts being now exposed, there is seen a T-shaped wound of the forearm nearly healed, and its borders presenting a soft and healthy appearance. Upon the lower surface of the pad that was removed a few drops of pus are discernible. There are no secretions upon the surface of the wound. The ecchymotic condition of the subcutaneous tissues of the forearm and of the lower inner half of the arm is still very marked. [After the patient had been inspected by the members of the society, the wound was irrigated with a solution of corrosive sublimate, and again covered with a sawdust pad. The after-progress of the case to complete recovery was rapid and without accident.]

PERMANENT UNILATERAL PARALYSIS

OF THE

LARYNGEAL ABDUCTORS

FOLLOWING CEREBRAL EMBOLISM:

A UNIQUE CASE.*

By D. BRYSON DELAVAN, M.D.,
NEW YORK.

In presenting the history of the case indicated in the title of this report the intention was to bring it before you, not alone on account of its extreme rarity and of the interest which always attends any scientific novelty, but more

* Read before the American Laryngological Association, May 13, 1884.

particularly because it seemed to represent an excuse for a renewal of the much-worn discussion as to the question of abductor paralysis in general, and as well to extend the allurements of a possible clew to some of the hidden mysteries of that most unintelligible condition.

A review of the literature of abductor paralysis, however, has quickly recalled the fact that we are to-day in as much uncertainty and doubt regarding many points in its pathology as ever, and we are forced to recognize that, with our present want of light, a case presenting the features of the one at hand is apparently beyond the possibility of certain and definite explanation. It is offered, therefore, as the simple relation of a curious fact, which, in the interest of scientific progress, should be added to the already existing knowledge of the subject, in the hope that accumulation of information may some day result in a full solution of the problems with which it is associated, and as the beginning of further research in the same direction. The following is the history of the case. As to its infrequency, Nothnagel, in his article on Cerebral Hæmorrhage, in von Ziemssen's "Encyclopedia," vol. xii, p. 116, says: "Unilateral paralysis of the vocal cords or of the pharynx are exceedingly rare," while under the head of cerebral embolism it is not alluded to.

Mr. W., aged sixty-nine years, American, widower, retired merchant. Family history in the main excellent, the patient coming of a stock remarkably long-lived and sturdy, but affording evidence in some of its branches of the tuberculous and the rheumatic diatheses. Patient has been a man of splendid physique and strong constitution, of regular habits, and strictly temperate in the use of alcoholics, but immoderately addicted to tobacco. Since middle life has suffered greatly from rheumatism, and has rapidly accumulated fat, but gives no history or indication of any other diathesis. He is right-handed. In 1876 he had an attack attended with vertigo, partial insensibility, and numbness, but without any distinct paralysis.

On December 18, 1877, he was again attacked, this time with a well-marked apoplectic seizure. Although complete insensibility was at no time present, there was intense pain in the back of the head, and in the nose on the left side, numbness and impairment of motion of the left arm, side, and leg, almost total inability to swallow, and, finally, a remarkable change in the quality of the voice, which, from having been full, deep, and sonorous, was reduced to a cracked, piping, and uncertain tone, which rendered its use almost impossible. Articulation was also impaired, the patient for months afterward being obliged to pronounce each syllable separately, speaking slowly and with difficulty. There was at no time, nor to any degree, aphasia. There was distinct ptosis, with paralysis of the left side of the face and tongue.

After continuing for two or three days, the general symptoms began to subside, and a slow but pretty steady improvement continued for many months, with regard to all except the voice, the leg first regaining its normal condition, then the arm, and, finally, the face. In the voice, however, there was little apparent change for some time, but by degrees it became more readily controlled and less discordant, although the high-pitched quality has persisted up to the present time, together with loss of phonating power.

In 1882 permission was given to examine the larynx, when it was at once made evident that there was a complete paralysis of the left vocal band, the position of which was in the median line.

The larynx was remarkably easy of demonstration, and the diagnosis was afterward confirmed by my friend, Dr. Clifton Wagner, who kindly consented to examine the case in consultation.

Laryngoscopic examinations, made at intervals subsequent to 1882, have demonstrated no change in the position of the cord. To summarize briefly; in a case of apoplexy, due, evidently, to embolism of the middle cerebral artery, in which paralysis in the region of the pharynx and larynx was especially well marked, all of the paralytic symptoms have almost entirely disappeared except those relating to one set of muscles—namely, the laryngeal abductors of the affected side—and these have continued paralyzed, without any apparent change, for a period of seven years.

From the foregoing record it is evident that the origin of the laryngeal paralysis, together with that of the other muscular groups, was central. Simultaneously with the attack of hemiplegia the voice was lost. Consequently, the causes of both were probably identical. In other words, a lesion occurring in one and the same region of the brain was responsible for both. The diagnosis of cerebral embolism or endarteritis is based, with justice, upon the gradual onset of the attack, the absence of complete unconsciousness, and the steady disappearance of the hemiplegia, together with the fact that the patient has since had slight attacks of vertigo, with numbness, heat, and formication of the side first affected. From the seat of the paralysis resulting from the principal attack, it is more than probable that the middle cerebral artery was the vessel affected. We have, therefore, embolism, anemia of certain brain-centers, gradual re-establishment of the circulation, with corresponding disappearance of the paralytic symptoms, and, finally, permanent paralysis of the most important, and by far the most active, set of muscles in the larynx. Admitting the possible existence of a ganglionic center for the larynx, the results above described may be explained upon the basis of one of the three following propositions:

I. That broadly formulated by Semon—namely, that "there is a proclivity of the abductor fibers of the recurrent nerve to succumb to pathological influences affecting the roots and trunks of the motor nerves of the larynx."

II. That there is an inherent tendency in the cerebral motor center for the larynx to degenerative processes from which the neighboring parts of the brain are exempt.

III. That the ceaseless activity of the abductors is maintained by the expenditure of an amount of nervous energy greatly in excess of that required to stimulate the opposing muscular group—i. e., the adductors—so that a central lesion, sufficient merely to weaken the energizing power of the neighboring centers, might result in a virtual paralysis of the abductors, sufficient force not being left them to oppose their fellows of the opposite group.

The explanation of the present case will probably be found to lie within the limits of the two last propositions, and to be based upon the following ground: Compensation for the nutrition withdrawn by occlusion of the affected artery was established by the development of the collateral circulation of the region to an extent sufficient to furnish a supply of nervous energy adequate to all ordinary demands, except in the case of the abductors, in which, the demand being

excessive, the diminished nerve-supply failed to furnish a stimulus capable of enabling them to maintain their normal relation of adductor opposition, and thus producing the feebleness, irregularity, and uncertainty of tone observed in the voice, and, laryngoscopically, the position of the vocal band as in abductor paralysis. It is not impossible, moreover, that the special tendency of the laryngeal center to degenerative changes may be due to some distinct peculiarity in the distribution of the arterial branches supplying the part.

1 EAST THIRTY-THIRD STREET.

DISCUSSION.

Dr. KNIGHT remarked that this subject was a very obscure one. He had once seen a patient who had fallen down stairs and struck on the top of the head, who afterward noticed an alteration in his voice, and, on subsequent examination, the only symptom or sign resulting from the accident was paralysis of one abductor. It was one of the most striking cases in favor of independent nerve-supply of the abductors. At any rate, it showed that there was some lesion which affected the abductor without affecting the adductor. It was not very likely that there had been any injury of the abductor muscle itself.

THE TREATMENT OF FRACTURE OF THE PATELLA.*

By J. H. HOBART BURGE, M. D., BROOKLYN,

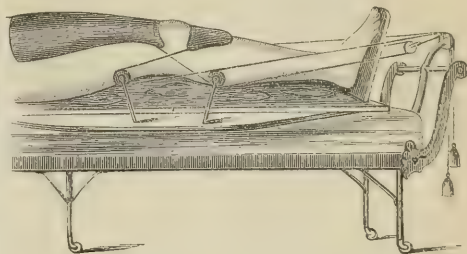
VISITING SURGEON TO THE LONG ISLAND COLLEGE HOSPITAL, CONSULTING
SURGEON TO ST. JOHN'S HOSPITAL.

WHAT are the indications in the treatment of fracture of the patella? Obviously, as in other fractures where displacement has occurred, to put the fragments as nearly as possible into their normal relation to each other, and keep them there until union, in this case generally ligamentous, has taken place and has become strong enough to resist all ordinary influences which would at an earlier period be likely, in whole or in part, to break it up.

A marked feature of the method which I employ is the weight and pulley, and the superiority of this over all other modes of retention can, in my opinion, hardly be over-estimated. All other appliances for the retention of the fragments in this fracture, excepting, of course, Malgaigne's hooks, relax speedily, and have to be very frequently renewed or readjusted, and, in my experience, this is a constant temptation to make them uncomfortably tight. This is also true of the different methods of tying together with separate strings, at the side of the patella, the bands which press directly upon the bone. This objection is obviated when these separate ties are elastic, but these ties only help still more to hide from view the part which requires frequent inspection in order that the surgeon may know and feel that all is going well.

If I am not mistaken, I was the first to use the *axis in peritrochio* in the treatment of this injury. You will find my apparatus described and illustrated in the "Medical Record" for April 15, 1868, and in Hamilton on "Fractures and Dislocations," 4th edition. In these days, when

almost all of our good things are traced back to the first and second centuries, we may well be a little diffident in claiming originality for anything, but, if the fathers did use this method, it was forgotten, and I revived it sixteen years ago. The apparatus, which I show to-night for the first time in any society, I have used in both hospital and private practice with great satisfaction. A very short description will suffice, since a glance at the instrument itself, or at the accompanying woodcut, will make all plain.



The padded straight board upon which the limb rests is five or six inches wide throughout its length, except that the upper end is somewhat broader, for the comfort of the patient. It is divided and hinged opposite the knee, to provide for slight passive motion, of which I shall speak further on. A movable foot-piece is attached. This straight board is hinged at its upper end to another board of about equal length, and wide enough at its middle third for the insertion of screws supporting little brass wheels, around which the cords are passed to the weights at the foot of the bed. The splints proper are of sole-leather—one about a foot long, five or six inches broad at its upper end, narrowed toward the knee, and made concave at its lower end to fit the upper border of the patella; the other splint about three inches and a half both in breadth and in length, cut out at its upper margin so as to fit the lower border of the bone. These splints of sole-leather should be soaked a few minutes in cold water, till they are quite pliable—hot water makes them too soft, and lengthens the time required for drying. Pad one side of each splint with cotton-wool, and cover neatly with ordinary unbleached muslin. Bind both splints to the limb as nearly as possible in the position which they are intended to occupy, with a roller bandage. In a few hours they will be thoroughly molded to the limb and as firm as a board. The roller can then be removed. A small strong cord, for the attachment of the weights, should now be sewed firmly just above the concave margin of each splint and passed through the pulleys, as shown in the apparatus before you.

The splints are now so firm and fit so accurately that bandages are unnecessary. They require only to be tied in place, the bands passing not directly about the limb, but under the board upon which the limb rests. It may be well to pin these bands to the splints to prevent their slipping. The weights may vary from one to three or four pounds.

When I first introduced this apparatus I made for it the following claims, which have been fully justified by subsequent experience :

* Read before the Medical Society of the County of Kings, July 15, 1884.

1. It leaves the injured bone so exposed to the surgeon's observation that he need have no anxiety in reference to *tilting, side-slipping, or retracting* of the fragments.

2. It grasps so firmly and yet so tenderly the quadriceps extensor, together with the upper fragment of the bone, that it enables us to approximate the broken surfaces more completely than I have ever been able to do without violence.

3. It is comfortable to the patient.

4. It is inexpensive, simple in all its parts, easily extemporized, and easily applied.

The entire cost is about three dollars. Any ordinary carpenter can finish the wood-work in two hours. If any member of the profession desires to put this appliance to the test in his own practice, I will loan it to him, either for use or as a pattern to make one by.

I can now make one more claim—viz., that, while the fragments are thoroughly held in place, such a degree of passive motion can be made from time to time as will greatly lessen the stiffness of the joint which so often annoys our patient for months after he is allowed to go at large.

Provision is made for elevating the foot to the extent of 30°, though the utility of this practice has, I think, been reasonably questioned.

My friend, Dr. James L. Little, of New York, uses plaster of Paris, making a clear distinction between a plaster *bandage* and a plaster *splint*. He applies a firm splint of plaster to the posterior aspect of the limb, and also plaster splints of coaptation to the broken bone, and covering all with a roller. In his experienced hands, no doubt good results are obtained; but, in the very nature of things, these coaptation splints must relax, especially if the patient gets about on crutches. If in any given case there are special reasons for getting the patient up, Dr. Little's posterior splint is excellent, but, if he is to remain in bed, it seems to me to confine the knee unnecessarily, and to favor the false ankylosis to which reference has been made. The strictures of Dr. F. H. Hamilton upon plaster of Paris as a dressing in the treatment of fractures are strong, and, I think, in the main well founded. Yet it must not be forgotten that great improvements have been made in all the details of its application. I have been surprised at the skill displayed by some surgeons in the use of this material. Nevertheless, I think it can not be used with safety by those who have had little surgical experience.

Dr. Little emphasizes an important point in writing of his appliance by the use of the following italics: "*This dressing differs essentially from all others in that the fragments are adjusted by the hands of the surgeon, and the setting of the plaster keeps them in the exact position in which they are held.*" It is fair to say that the doctor had not seen my apparatus, for by its use the surgeon can at any moment separate the splints of coaptation and adjust the fragments, or, what is better still, assure himself that no adjusting is necessary. He has then only to allow the splints to be drawn gently into place again, as they are by the weights, which never tire and never relax.

A CASE OF CÆSAREAN OPERATION.*

By GEORGE T. HARRISON, M.D.,
ASSISTANT SURGEON TO THE WOMAN'S HOSPITAL.

THE specimen which I here exhibit is a uterus removed after death from a woman who had a contracted pelvis, in consequence of which I found it necessary to perform the Cæsarean section. The history of the case briefly is as follows:

The patient was thirty-one years of age, married, a primipara. During early childhood she suffered from rickets. She was unable to walk until the fourth year. After she recovered from this disease her health became excellent. When I saw her for the first time, on the 6th of February, she was suffering from a slight bronchitis. Otherwise she enjoyed good health. During the whole period of pregnancy she had suffered comparatively few annoyances, had had a good appetite, and had slept well. On the 22d of March the patient sent for me, being alarmed because there were no signs of commencing labor, according to her count she having reached full term. An examination *per vaginam* showed that the head was above the superior strait, and I then recognized the fact that there was narrowing, and supposed it to be a case of flattened pelvis. At that time I did not know that she had had rickets.

Reckoning from the last menstruation, I told her that labor was likely to come on about the 25th of March. It was not, however, until the night of the 4th of April that labor pains began. On the morning of the 5th I found the pains recurring at intervals of twenty minutes, but no apparent effect had been produced on the cervix. April 5th, 6th, and 7th the first stage dragged along slowly. Hypodermic injections of morphine were administered several times, to give the patient an opportunity to procure rest. On the afternoon of the 7th I thought it was time to interfere, and sent for Dr. A. R. Robinson, who appointed 9 p. m. as the hour at which he could meet me. I asked Dr. R. C. M. Page to be present at the same time. The patient was put under ether, and an attempt was made, after manual dilatation of the os (the os being dilatable), to apply the forceps. This was soon abandoned, as it was found impossible to bring the head down by its use. I then tried version, but, after reaching the child's legs *in utero*, my arm was grasped so tightly by the sphincter vagina that my hand did not retain sufficient power to seize the foot, and I had to give place to Dr. Robinson, who succeeded in seizing a foot and bringing it down. After many futile efforts at version, we decided that it was impossible to extract the child in this way.

The only alternative open to us now was laparo-hysterotomy. At my request the husband went for Dr. Gillette, who came at once and gave me the benefit of his skill and experience. Dr. Page giving ether, with the assistance of Dr. Robinson and Dr. Gillette, at about 1 p. m. I proceeded to the performance of this operation. The child proved to be a very large one. Its weight subsequently was found to be eleven pounds and three quarters. The edges of the wound in the uterus were brought together by a continuous suture of silk. The patient reacted well from the operation. The next day her condition was favorable. The third day, however, peritonitis showed itself, and, on the evening of April 10th, at 7.30, she expired.

Autopsy, April 11th, by Dr. B. A. Lindsey.—Extensive peritonitis. Union along the whole line of the abdominal wound. The wound in the uterus also united. Accurate measurement

* Read before the New York Obstetrical Society, April 15, 1884.

showed the conjugate diameter to have a length of two inches and three quarters. The transverse diameter was four inches and a quarter. It was, therefore, a rachitic flattened, generally contracted pelvis.

A WOUND OF THE ABDOMEN. INVOLVING THE UMBILICUS. FOLLOWED BY HÆMATURIA.

By L. J. DAILEY, M.D.,

REDFORD, N. Y.

On the evening of the 26th of March I was called to see W. S., a boy of thirteen years of age, who, a few hours previously, had received a penetrating wound of the abdomen by sliding from a hay-mow on to a pitch-fork that rested against it. One of the tines of the fork entered the skin at a point an inch and a half below and one inch to the left of the umbilicus, passing upward and slightly inward through the superficial fascia and the aponeurosis of the external oblique until it reached the umbilicus, as ascertained by probing. There was very little external hæmorrhage, from the fact that it did not pass entirely through the walls of the abdomen, and therefore did not reach the peritonæum or bowels.

I was led to give a very favorable prognosis, and, after prescribing an opiate to quiet the little existing pain that he complained of and making a local application to the wound, I left, with a promise to see him again next day. On arriving there about noon the following day, I was surprised to learn that during the night the patient had passed a large quantity of bloody urine, and, as it had been several hours since he had urinated and as there appeared to be some distension of the bladder, as ascertained by percussion, I asked him if he did not want to make water, to which he replied in the affirmative, and, getting out of bed with but very little assistance, he passed nearly a pint of bloody urine without any difficulty and without producing the least pain, except a slight feeling of uneasiness at the wound, due to the contraction of the abdominal muscles which occurs during micturition. The patient continued to pass bloody urine until the fifth day after receiving the injury, when it entirely disappeared, the patient going about on the sixth nearly as well as ever. There was no sign of traumatic peritonitis, either circumscribed or general, there was but a slight elevation of temperature at any time, and the pulse was but little accelerated.

The point that remains to be cleared up and to be answered is, how the blood reached the bladder and was voided with the urine from a wound that was entirely above and in a direction away from that organ. There was no injury of the abdominal viscera, as the probe was arrested on reaching the umbilicus, showing that the penetration did not extend beyond that point. The ureters could not have been injured, from the direction taken by the fork, and there was no injury of the urethra, vas deferens, or prostate, that would account for the hæmaturia; and the only way that I can possibly account for it is in the presumptive existence of a pervious urachus, even at the age of the patient—namely, thirteen years. "The summit or apex of the bladder," says Gray, "is rounded and directed forward and upward; it is connected to the umbilicus by a fibro-muscular cord, the urachus, and also by means of two rounded fibrous cords, the obliterated portions of the hypogastric arteries, which are placed one on each side of the urachus. The urachus is the obliterated remains of a tubular canal

which exists in the embryo and connects the cavity of the bladder with a membranous sac, placed external to the abdomen opposite the umbilicus, called the allantois. In the infant, at birth, it is occasionally pervious, so that the urine escapes at the umbilicus." Here we find that Gray only states that it is *occasionally* found pervious at birth. Therefore I ask if it would be unreasonable to suppose that, in this particular case, it remained pervious at thirteen, and that it was the means of conveying the blood from the wound to the bladder. In conclusion, I will add that there was no hæmorrhagic extravasation or discoloration of any part. I have never seen or heard of such a case before, and, in looking up the literature of such injuries, I fail to find any record of any. Therefore I am forced to the conclusion that it is rather unique.

Book Notices.

Diseases of the Heart and Thoracic Aorta. By BYRON BRAMWELL, M.D., F. R. C. P. E., Lecturer on the Principles and Practice of Medicine, and on Practical Medicine and Medical Diagnosis, in the Extra-academical School of Medicine, Edinburgh, etc. With 317 Illustrations. Edinburgh: Young J. Pentland, 1884. Pp. xvi+783.
The Same. New York: D. Appleton & Co., 1884. [Price, cloth, \$8.]

ONE of the first prerequisites to writing a good book is an intimate knowledge of the subject which one is to write about. Huxley has forcibly remarked, in his lectures on biology, that the important practical facts in that comprehensive science, or rather group of sciences, can not be obtained by the mere reading of books, and the conclusion is obvious that there is need of extensive observation and investigation on the part of one who would instruct us in so important a department of the science of life as is occupied by diseases of the heart. The author's fifteen years of service in a renowned school, as teacher and investigator, have certainly furnished him with opportunities for gaining the necessary information, and we have the result of his labors in the handsome volume which is before us. The construction of the work is rational and simple. After the general considerations concerning cardiac anatomy and pathology, the diseases of the covering of the heart are first studied, then those of its lining, next those of its muscular and nervous structure. These chapters are followed by a brief consideration of the diseases of the aorta. In style the author has adhered closely, and at first one might perhaps be inclined to say too closely, to the style of the lecture-room, but it will be seen by a note in the preface that the work is essentially the text of his lectures during the lecture season of 1883-'84.

In the pages which are devoted to the preliminary considerations of his subject several points are noteworthy. We may mention his analysis of the cause of heart-motion, which is exhaustive, clear, and satisfactory; also his acceptance of the conclusion of Martin and Sedgwick that the coronary arteries receive their blood supply during systole, which is contrary to previously received notions. He also accepts the doctrine that the influence of the cardiac ganglia is not indispensable to the rhythmic action of the heart. In this portion of his work, being largely physiological, we find him depending upon physiologists, and especially upon Gaskell, for his propositions.

The chapter upon the general pathology of the heart is a

very satisfactory one. This portion of the subject is, in any one's hands, far less intricate than several of those which follow, but all men are not equally happy with our author in explaining intelligibly even simple propositions. The use of a homely phrase is sometimes very expressive and convincing, and he has taken advantage of this fact in several instances; for example, the term *back-wash* is frequently substituted as an equivalent for *regurgitation*.

In the succeeding chapter we are brought into deeper water. Clinical investigation of cases, case-taking, inspection, and palpation are plain enough, and are explained with sufficient clearness; there is some obscurity in connection with percussion; and auscultation and sphygmography are intricate enough, especially the former. The explanatory diagrams are but partially successful, because they only demonstrate, and that imperfectly, the length of the given heart-sounds. The source of the difficulty, and we are referring now particularly to auscultation, lies in the intrinsic obscurity of the subject itself. What words can depict to a dull ear, and perhaps a dull mind, the differentiation between two synchronous heart-sounds—that is to say, the two synchronous sounds which are emitted with each diastole and systole of the right and left hearts? Our author would probably reply, Such persons should not auscultate. But they will continue to do it, or rather to attempt it, in spite of faulty teaching and dull perceptions, and fortunate will that man be who can devise a system of models and pictures whereby this obscure subject may be made clear. Certain portions of this chapter would be credited with prolixity by any but devoted and advanced students of cardiac pathology, notably the discussion concerning the nature and significance of the basic murmur which is heard in the second left interspace in the earlier stages of anemia (pp. 189–207). The author's devotedness to his subject undoubtedly justified (at least to himself) this protracted attention, on the ground of thoroughness. The same might be said of his remarks concerning those useful instruments of precision, the sphygmograph and the cardiograph (the latter being described at length in the appendix).

Diseases of the pericardium are fairly and plainly discussed. In regard to suppurative pericarditis, the author favors treatment by incision, an operation which is formidable enough, and which, according to his statement, has been done successfully only twice. Adherent pericardium is described as a separate disease. We fail to see either the advantage or the propriety of such a classification, since, by the author's own description, there is no combination of symptoms differing from those which are found in the corresponding condition in chronic pericarditis.

In the description of acute endocarditis, in the chapter upon diseases of the endocardium, we see a marked contrast to the terse, vigorous, and clear description which may be found in Reynolds's "System of Medicine" (Vol. III), which is quoted by the author. He expresses with positiveness his belief that mitral lesions in connection with endocarditis may be, and often are, recovered from. While his position upon this point may be a very good one, he does not sustain it by good logic. Thus he says (p. 377): "If, then, choreic endocarditis with vegetations can be recovered from, why can not rheumatic endocarditis with vegetations be recovered from?" Admitting that his previous reasoning upon the identity of rheumatic and choreic endocarditis is correct, and adopting his own conclusion, we find him saying finally: "In fact, in many cases [*italics are ours*] the choreic endocarditis is undoubtedly rheumatic." From the foregoing the defect in his argument is manifest.

The only allusion in this work to the influence of micro-organisms upon heart lesions is to be found in the section upon ulcerative endocarditis. The results of the investigations of Osler and Klebs upon this subject are quoted with a *quasi* ap-

proval, but it is plain to be seen that our author has not contracted the "bacterial craze," as some skeptic has recently designated it.

Concerning the remaining diseases which are discussed, comment at this time is unnecessary. Several of them are too obscure, as the author admits, to be recognized during life, and are therefore mainly of interest to the pathologist. We could wish that more attention had been given to the subject of cardiac therapeutics, and less, as has already been hinted, to theoretical considerations. We desire to refer now to a feature which is one of the most excellent which this book contains—namely, the three hundred and seventeen illustrations which are mentioned in the title. Those which represent the anatomy, physiology, and topography of the heart are unpretentious in character, whether diagrammatic or detailed, but, in the main, are entirely clear and satisfactory. Of a more ambitious character are the full-page lithographs, illustrating in natural size the various lesions which are described. There is no work upon this subject, so far as we are aware, which is comparable with this one in that respect. We would suggest, however, for a future edition, either the stronger shading of the diseased portions, as represented in the picture, or the suitable coloring of the same, though at the expense of the present artistic effect, which is quite admirable.

The impression which this book has given us, and which will be created, we believe, in the professional world, is a very gratifying one. It is not without faults, and what book is? As a careful, conscientious, and thorough work upon cardiac disease, we wish it all the success which it is certain to get.

The International Encyclopædia of Surgery. A Systematic Treatise on the Theory and Practice of Surgery, by Authors of Various Nations. Edited by JOHN ABBOT, JR., M. D., Professor of Clinical Surgery in the University of Pennsylvania. Illustrated with Chromo-lithographs and Woodcuts. In Six Volumes. Vol. IV. New York: William Wood & Co., 1884. Pp. xxiii–987.

The fourth volume of this important work is devoted chiefly to diseases of the bones and joints, a part being given up, however, to the question of tumors. The first chapter is by Dr. John H. Packard, and relates to injuries of bones. All but one page of the two hundred and sixty composing the article are devoted to fractures, the other injuries being contusions and incised and punctured wounds, which are dismissed in a few words. Gunshot wounds have been previously discussed. The question of fracture is well treated, the discussion being neither too diffuse nor too much given up to different forms of splints. The author has aimed at general principles while describing each fracture in detail, and by so doing has given a very readable and instructive article.

Chapter II is by Mr. Barwell, of London, and treats of diseases of the joints. It includes morbus coxarius, the different varieties of synovitis, loose bodies, the gouty and rheumatic affections, ankylosis, the neuroses, and tumors, and is one of the most exhaustive in the work.

The article on excisions and resections is by the editor; and a special chapter on excision of the knee is contributed by Dr. Fenwick, of Montreal, who has had such good results as regards subsequent shortening. The two together cover the whole ground, the operations upon each joint and each particular bone being described in full, with many valuable tables of results.

The article on tumors is by Mr. Henry Trentham Butlin, of St. Bartholomew's Hospital, London. It covers rather more than two hundred pages, and is profusely illustrated, clear and plain, and excellent for reference.

The late Dr. Lidell wrote on the somewhat general subject of injuries of the back, including those of the spine, its membranes, and the spinal cord, while Mr. Treves, of the London Hospital, deals with malformations and diseases of the spine, and closes the volume.

We are glad to see that as the work approaches completion it loses nothing of the characteristics which made it so favorably received at first, and we await with interest the two remaining volumes, which will complete a very valuable collection of surgical literature.

Transactions of the American Surgical Association. Volume the First. Edited by J. EWING MEARS, M. D., Recorder of the Association. Philadelphia: P. Blakiston, Son & Co., 1883. Pp. xxxi-568.

In reading over this, the first volume issued by the American Surgical Association, we are pleased at its scientific character. It contains the papers read from September, 1880, to June, 1883, and the matter contained in it compares favorably with the report of any other society in America of which we have any knowledge. Judging from the character of these papers, the association means to do good work, and has fairly begun.

Taking the papers in detail, the first is by Dr. S. W. Gross, on the Influence of Operations upon the Prolongation of Life and Permanent Recovery in Carcinoma of the Breast, in which he reaches the conclusions, among others, that local reproductions do not militate against a permanent recovery, provided they are freely excised as soon as they appear; that lymphatic involvement does not forbid operation, since infected glands were removed in more than one third of the examples of final cure; that the subjects are, almost without exception, safe from local and general reproduction if three years have elapsed since the last operation; and that all carcinomata of the breast, if there are no evidences of metastatic tumors, and if thorough removal is practicable, should be dealt with as early as possible by amputating the entire mamma with its integuments, dissecting off the subjacent fascia, and opening the axilla with a view to its exploration and the removal of any glands which were not palpable prior to interference.

Other articles by the same author are upon the Condition of the Cicatrices after Complete Expiration of the Breast for Carcinoma, and a Case of Nephrectomy for Medullary Carcinoma and Partial Chole-cystectomy for Calculus, in the same subject.

The second paper is the report of a case of supposed spontaneous aneurysm of the posterior tibial artery, by Dr. R. A. Kinloch, of Charleston, with a table of twenty-two similar cases.

There are two papers by Dr. Packard, of Philadelphia, the first a report of some Difficult Cases of (Esophagotomy, and the second on Ligation of the Primitive Iliac Artery for the Relief of Secondary Hæmorrhage after Amputation at the Hip Joint.

Dr. James A. Cabell, Dr. W. T. Briggs, and Dr. B. A. Watson each contribute papers on the question of Antiseptic Treatment, which is discussed pro and con with considerable vigor.

Dr. Gunn discusses the Treatment of Fractures of the Skull, and formulates his convictions on the subject as follows: In all recent fractures with depression, whether simple or compound, even though entirely without symptoms of compression, if there is reason to believe that the internal table is depressed, and if there are no symptoms of marked concussion or collapse, elevation of the depressed portion should be promptly effected. In chronic cases, as soon as positive, even though slight, symptoms of cerebral irritation present themselves, a disc of the cranial walls intended to include the irritating point should be removed with the trephine.

Dr. R. J. Levis has an article on the Treatment of Fracture of the Patella with the Object of producing Bony Union, and

Dr. Moore, of Rochester, gives a paper on Section of the Femur for the Relief of Bony Ankylosis of the Hip Joint in Bad Position, one on Fracture of the Femur, and one on Luxation of the Ulna in connection with Colles's Fracture.

There is a very exhaustive and elaborate paper by Dr. Senn also on Fractures of the Neck of the Femur, with special reference to Bony Union after Intra-capsular Fracture, which is one of the best in the book; and there are other noteworthy papers on Excision of the Tarsus, by Dr. P. S. Conner; on Foreign Bodies in the Air-passages—a Study of One Thousand Cases to determine the propriety of Bronchotomy; on Dislocations of the Astragalus, by Dr. Basil Norris, U. S. A.; and one on the Removal of Meckel's Ganglion for the Relief of Trifacial Neuralgia; besides several other shorter contributions, all of which are good.

The book is exceedingly well edited and well printed, and is, on the whole, a very attractive and valuable addition to surgical literature.

A System of Oral Surgery: Being a Treatise on the Diseases and Surgery of the Mouth, Jaws, Face, Teeth, and Associate Parts. By JAMES E. GARRETTSON, M. D., D. D. S., Dean of the Philadelphia Dental College, etc. Illustrated with numerous steel plates and woodcuts. Fourth edition, thoroughly revised, with additions. Philadelphia: J. B. Lippincott & Co., 1884. Pp. 1,037.

THE last edition of this work was reviewed in this journal only two years ago, and its merits were pointed out. The present volume is larger than the last, contains many new illustrations and several chapters of new matter, and is better in every way. From its title it might be supposed to be a work for the dentist rather than the surgeon, but every disease pertaining to the mouth or the parts adjacent to the mouth comes in for notice. There are chapters on inflammation, on anæsthesia, on nerve-stretching for neuralgia, on tumors of the antrum, on salivary fistula, on the tonsils, on the pharynx, on the nose, and on the skin diseases affecting the face. In other words, as well as being a work on dentistry, it is a work on the general surgery of all the parts in any way associated with the mouth. In the present edition the author has aimed at completeness and conciseness; he has handled a wider range of subjects than before, and handled them very thoroughly. There is a great deal of matter in the work which can not be found in general surgical text-books, and it is now, we suppose, generally used as a text-book in the dental colleges.

A Manual of Practical Hygiene. By EDMUND A. PARKES, M. D., F. R. S., etc. Edited by F. S. B. DECHAUMONT, M. D., F. R. S., etc. With an Appendix, giving the American Practice in Matters relating to Hygiene, prepared by and under the supervision of FREDERICK N. OWEN, Civil and Sanitary Engineer. Two volumes in one. New York: William Wood & Co., 1884. Pp. xv-556.

PRACTICAL hygiene, in the sense in which it is taken in this book, is a subject with which the large majority of physicians are, alas! quite unfamiliar. One cause of this is the splitting up of the science of medicine into its many specialties; another is that very many physicians have neither the time nor the inclination to give it the attention which it requires. This fact must not be forgotten, however, that in many communities in our country the physician is the authority on all matters which pertain to sanitation. Certainly for such there is a responsibility which can not well be shirked, and we commend this standard work to them and to all who are interested in the subject. The foregoing applies more particularly to that portion of the work which refers to State medicine, the value of which

is becoming more apparent with the development of our country. Such questions as the influence of climate and soil, atmospheric phenomena, the water-supply, sewerage, etc., are of interest to no one if not to the physician. The value of a book like this, which is comprehensive but not diffuse, can therefore be appreciated by a busy man who will require it for reference. The subject of foods, which is, of course, dealt with from its physiological standpoint, introduces many questions of physiology and organic chemistry, which are eminently practical and are treated of with satisfactory clearness. That portion of the work which is devoted to military hygiene in the British army in different parts of the world, interesting and valuable as it is, would seem to us either superfluous or requiring condensation in an American edition. A series of chapters on military hygiene, appropriate to the conditions of our own army, might well be substituted for it, if, indeed, this subject were not better considered in a work by itself. The appendix contains a series of short essays on American State medicine, which seem all too meager when compared with the work which has been compassed in the chapters that precede them.

A Practical Treatise on Surgical Diagnosis, designed as a Manual for Practitioners and Students in Medicine. By AMBROSE L. RANNEY, M. D., Professor of Practical Anatomy in the New York Post-Graduate Medical School, etc. Third edition, thoroughly revised, enlarged, and profusely illustrated. New York: William Wood & Co., 1884. Pp. xx-608.

DR. RANNEY is to be congratulated on the appearance of the third edition of this well-known work in a more complete form and profusely illustrated. New matter has been added relating to diseases of the brain and spinal cord, and what was previously published has been revised as suggestions and corrections have occurred to the author.

As it now stands it is an exceedingly valuable reference-book for the student, and has been found to be such by several of the medical colleges. The contents are well indexed, and whatever points one may desire to look up can be found clearly stated at a glance.

Illustrations of the Influence of the Mind upon the Body in Health and Disease, designed to elucidate the Action of the Imagination. By DANIEL HACK TUKE, M. D., F. R. C. P., LL. D., etc. Second American from the second English edition. Philadelphia: Henry C. Lea's Son & Co., 1884. Pp. xviii-33 to 482, inclusive.

WITHIN the pages of this ample work Dr. Tuke has collected a large number of cases which serve to exhibit in a more or less striking manner the intimate relationship between mental phenomena and bodily function. As its title denotes, the volume is devoted to the illustration of certain psycho-physical principles which the author believes to be clearly discernible in the light of recent physiological research. He has used great diligence in collecting and classifying cases, and no pains have been spared to ascertain the absolute authenticity of every one of them.

Not only has the influence of the mind upon the body in health, as shown by various disorders of sensation and motion of purely psychical origin, received attention, but the same principle has been traced out in the domain of disease. Very interesting in this connection are the cases adduced as corroborative evidence of the great value of the psychological element as an adjunct in the treatment of an extensive class of diseases.

The work is divided into four parts. Part first treats of the intellect, part second of the emotions, part third of volition, and

part fourth of the influence of the mind upon the body in the cure of disease. The first chapter is devoted to the consideration of general psychological and physiological principles. The second, third, fourth, and fifth treat of the influence of the intellect upon sensation, upon the voluntary and involuntary muscles, and upon the organic functions. In the seventh, eighth, ninth, tenth, and eleventh chapters the influence of the emotions is considered. The thirteenth and fourteenth chapters are devoted to the discussion of the influence of the will upon sensation, the voluntary and involuntary muscles, and the organic functions; while in the fifteenth, sixteenth, and seventeenth chapters the influence of the mind upon the body in the cure of disease is abundantly illustrated by a mass of cases, many of which, it is true, make strong demands upon the reader's credulity.

It is impossible to peruse these interesting chapters without being convinced of the author's perfect sincerity, impartiality, and thorough mental grasp. The subject is by no means a simple one, and the danger of confounding cause and effect are frequently by no means inconsiderable. Nevertheless, Dr. Tuke has exhibited the requisite amount of scientific address on all occasions, and the more intricate the phenomena the more firmly has he adhered to a physiological and rational method of interpretation. Nebular theorizing and transcendental hypotheses find no place here. Guided by an enlightened deduction, the author has reclaimed for science a most interesting domain in psychology previously abandoned to charlatans and empirics. This book, well conceived and well written, must commend itself to every thoughtful understanding.

BOOKS AND PAMPHLETS RECEIVED.

Practical Manual of Diseases of Women and Uterine Therapeutics. For Students and Practitioners. By H. Macnaughton Jones, M. D., M. C. H., F. R. C. S. I. & E., Examiner in Obstetrics, Royal University of Ireland, etc. New York: D. Appleton & Co., 1884. Pp. xxiii-410.

Text-Book of Medical Jurisprudence and Toxicology. By John J. Reese, M. D., Professor of Medical Jurisprudence and Toxicology in the University of Pennsylvania, etc. Philadelphia: P. Blakiston, Son & Co., 1884. Pp. xii-9 to 606, inclusive.

Lehrbuch der Physiologie für akademische Vorlesungen und zum Selbststudium. Begründet von Rud. Wagner, fortgeführt von Otto Funke, neu herausgegeben von Dr. A. Gruenhagen, Professor der medicin. Physik an der Universität zu Königsberg i. Pr. Siebente, neu bearbeitete Auflage, mit etwa Zweihundertundfünfzig in den Text eingedruckten Holzschnitten. Zweite Lieferung. Hamburg und Leipzig: Leopold Voss, 1884. Pp. 161 to 320, inclusive.

Diphtheria, Croup, etc. Or, the Membranous Diseases: their Nature, History, Causes, and Treatment; with a Review of the Prevailing Theories and Practice of the Medical Profession; also, a Delineation of the New Chloral Hydrate Method of Treating the same; its Superior Success and its Title to be considered a Specific. By C. B. Galentin, M. D. New York: J. H. Vail & Co., 1884. Pp. viii-174.

The Formation of Poisons by Micro-organisms. A Biological Study of the Germ Theory of Disease. By G. V. Black, M. D., D. D. S. Philadelphia: P. Blakiston, Son & Co., 1884. Pp. viii-11 to 178, inclusive. [Price, \$1.50.]

Contributions of Physicians to English and American Literature. By Robert C. Kennen, M. D., South Carrollton, Ky. [Report from the "Medical and Surgical Reporter."]

Fifth Annual Report of the State Board of Health of Illinois.

THE
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THE INTERNATIONAL COLLECTIVE INVESTIGATION OF
DISEASE.

EVERY school-boy is familiar with the statement that at a certain stage in his career Alexander the Great sighed for more worlds to conquer; but there is this much to be said in Alexander's behalf, that he had accomplished something toward the conquest of the only world known to him before he heaved this historic sigh. Can as much be said for the promoters of the project termed the collective investigation of disease? We can not avoid this question in connection with the proposal to press the machinery of the International Medical Congress into the service of what seems just now to be the pet scheme of the British Medical Association.

Considerable time has elapsed since this dream of science "made easy"—of a grand republic of scientific investigators—took fast hold upon the minds of a great number of our British friends; it has met with a feeble attempt at imitation on our own territory, as witness the fiasco in the Medical Society of the County of New York last winter; and it appears to have made itself profoundly felt in Germany. And what has it accomplished? Has it settled anything? Has it even investigated anything in a way to put previous investigators to the blush? If it has done any of these things, we have failed to perceive it. What can it reasonably be expected to achieve so long as it distributes cards inscribed "Have you observed any case or cases in which pulmonary phthisis appeared to be communicated from one to another? Please answer Yes or No"? And yet this was the example of its workings which Sir William Gull thought proper to put forward in his address at the Copenhagen session of the International Medical Congress, wherein, with masterly eloquence, he asked that body to take up the prosecution of the scheme. At best, the answers to such a question, coming from a great body of men of diverse views, would constitute but a catalogue of raw impressions; and we can conceive of few things more hazardous to the prospect of our ever being able to build up an exact science of medicine than to generalize from such data. We might as well expect to clear up the hoop-snake myth by ballot, the polls being thrown open to everybody who had ever chanced to roam the fields.

We have watched this collective investigation movement with a good deal of interest, but hitherto we have refrained from any general comment on it. We have felt from the first that, while much was to be hoped for from it, nothing was to be expected, for it has seemed to us that the world was not yet ready for the successful working of such a method of accumulating data. When the facts to be observed are of a nature to call for exquisite discrimination on the part of the observers,

and when, as in medicine, concerted observation calls for a thorough understanding by each observer of the others' capacity and mental methods, it is rarely that even two investigators are to be found who can work together to advantage; that a great number of such men should be found, seems utterly out of the question. To multiply the number of observers is to depreciate the general quality of the work. We feel, therefore, that the system of the collective investigation of disease might better be confined within a comparatively narrow field until experience has shown that it is to some extent adequate to its purpose.

THE BOSTON CITY HOSPITAL.

It is now twenty years or more since this institution first opened its doors to the sick poor, and the measure of good which it has accomplished in that short period by affording shelter and medical treatment to persons deserving of its ministrations, great as it undoubtedly is, is not out of proportion to its contributions to the common stock of medical knowledge. It is true that many years have passed without a continuation of the series of portly volumes—similar in character to the annual reports issued by the great hospitals of London—of which the first was published soon after the opening of the institution. Our remembrance of that volume is that the work of preparing it fell upon a very small proportion of the members of the hospital staff, and, for the credit of the profession, we prefer to suppose that the lack of succeeding volumes of late years has been more owing to a natural disinclination on the part of those few gentlemen to bear the burden longer than to any failure of the work to meet with the practical recognition it so well deserved. But it is not alone by such publications that a hospital can make itself felt in the profession. By the excellence of its practice, and by the amount and the character of the clinical teaching it maintains, it takes a standing concerning which there is no ambiguity. In both these particulars, we have reason to feel convinced, the Boston City Hospital has made a most creditable showing, as, indeed, could scarcely have failed to be the case, considering the *personnel* of its staff.

Like our New York hospitals, the institution in question finds itself constantly exposed to imposition by persons who either are improper subjects for treatment in a general hospital or, being proper subjects in other respects, belong to a class for which the benefits of a free hospital were never intended. In the Twentieth Report of the Trustees, for the year 1883-'84, a manly attempt is made to open the eyes of the people of Boston to the fact that a free hospital should be free only to persons who, by misfortune or poverty, may require relief during temporary sickness. Quoting from a committee's report, made to the City Council in 1857, the trustees say: "We would not have this a hospital for the degraded victims of vice and intemperance, or as the home for the hopeless pauper; but we would have it regarded as an asylum for the industrious and honest mechanic and laborer who, by sudden injury or disease, is temporarily prevented from laboring for his own or his family's

support, and who, by proper care and medical advice, may have his suffering alleviated and be sooner restored to his health and his family, and be enabled to resume his labors." It strikes us that this very correctly expresses the proper design of a free general hospital. We learn by the report of the superintendent and resident physician that, of those who applied for admission during the year, 1,872 were not admitted: 75 for want of accommodation, 235 who needed only outpatient treatment, 124 non-residents, 48 who "applied but changed their minds," 8 who could not be found when calls were made at the addresses they gave, 148 who were the subjects of chronic and incurable disease (besides 99 with phthisis), 168 victims of delirium tremens and other forms of alcoholism, 155 with venereal disease, 33 pregnant women, 69 malingers, 15 subjects of mental disease, 10 who were "under age," 121 who were referred to other appropriate institutions, and 64 who are classed as "miscellaneous."

Valuable statistical tables are appended, prepared by the medical staff, showing the character of the injuries and diseases for which relief was sought, both in the wards and in the outpatient department, the various operations performed, and the terminations of the cases. These tables show the marks of very careful preparation, and in regard to the statistics of the hospital, as in every other respect, we must congratulate the medical staff.

THE "WORLD'S" MEDICAL DEPARTMENT.

THE "World's" senseless and offensive account of a hysterectomy performed at the New York Hospital, to which we lately adverted, turns out, according to what we consider trustworthy information, to have been furnished to that paper by a medical student whom circumstances enabled to be present where his company was not desired. Unless we misapprehend the temper of the hospital authorities, the individual will not hereafter find things so favorable to his purposes at that particular institution; but that may matter little to him, for there are those who, in a dearth of facts, know how to take refuge in invention. As for the "World," we did think better of it than to suppose that it would continue to admit into its columns the productions of a person of whom, apart from what had been shown to be his utter disregard of propriety, it could only be said that he was a fit candidate for the plucking process, if he were ever to "come up."

But we see now that we gave the "World" too much credit, and it is apparent that it has determined on a medical department as one of its regular features, for on Thursday last it returned to its vomit. This time it is "Professor Sabine, of the College of Physicians and Surgeons, the leading rhinoplastic or skin-grafting surgeon in the world," that it takes under its wing; and it proceeds to give an account of how he recently made "a real nose, one that could snore and be wiped with a handkerchief, . . . warranted or money returned." This exploit is said to have been performed at Bellevue Hospital, and the name of the patient is given. Evidently, after these fine touches of humor on the part of its contributor, the "World" must think

itself *très ha-ha*, to use an expression said to be of the approved Parisian style of slang.

Both Dr. Sabine and Dr. Bull, for it was the latter whose operation furnished the inspiration for our medical student's first journalistic flight, are gentlemen who are not easily disconcerted, and we therefore do not expect to hear of their having waylaid their persecutor; moreover, there is this redeeming feature about the matter, that the very ridiculousness of the statements made by him will go far to rob them of their sting. In the interest of decency, however, the question becomes still more pressing, whether, as we suggested on a former occasion, something can not be done to protect our hospital surgeons against newspaper reports that those who do not know them may be uncharitable enough to look upon as having been inspired by them.

MINOR PARAGRAPHS.

FROM "THE BUGS" TO BLACK VOMIT.

ON Tuesday night of last week a policeman found a man lying helpless on a truck in Cherry Street, and this is how the officer stated his diagnosis: "Well, I'll be blowed if I don't think you've got the bugs." An ambulance was sent for, and the man was then said to have typhoid fever. He was finally admitted into the New York Hospital, not many hours before his death, and there the conclusion was reached promptly that he was suffering from yellow fever—a diagnosis that the post-mortem examination abundantly corroborated.

Who the man was, or whence he found his way to the truck, we have not yet been told, and some uneasiness has been felt as the result of the uncertainties wrapped up in this absence of facts. The idea seems to be pretty generally entertained, however, that the victim was a sailor, although this is little more than pure conjecture, founded on the fact that his feet were soiled with tar; and the circumstance that his general make-up failed to stamp him as a seaman outright has led to the supposition that he was a stowaway who had been made to work his way to this port on a short voyage. There is nothing to indicate that he found his way into the streets directly from any vessel in port, and hence the horrible suspicion is entertained that the keeper of some sailors' boarding-house, more acute to perceive the nature of the poor fellow's sickness than the policeman and the ambulance surgeon proved to be, inhumanly thrust him out to die in the street.

Whatever truth there may be in any of these surmises, this grim fact stares us in the face—that yellow fever has eluded our quarantine system, perhaps, as one of the newspapers has suggested, by a vessel having landed stealthily in the East River after coming through Hell Gate. On the whole, the affair is not calculated to increase public confidence either in our sanitary officials or in our detective force.

THE AMERICAN DERMATOLOGICAL ASSOCIATION.

ON several occasions we have called attention to the excellent character of the work done in dermatology in this country, including the proceedings of this association. The annual meeting, held last week, a report of which will be found elsewhere in this issue of the journal, was quite up to the mark, whether we regard the character of the papers read, the tone of the discussions, the proportion of attention given to each of the two branches—dermatology proper and syphilidology—to the study of which the association is devoted, or the attendance of gentlemen practicing these specialties in various parts of the country.

In some of its features, indeed, the meeting seems to us to have been in advance of those held in preceding years—the discussions were held well to the point, so that, so far as we can judge from the report, there was none of the rambling and even rancorous talk that has sometimes figured. Nor do we perceive any signs of the bootless contest having been revived between the diathetic and the local systems of etiology. The association is to be congratulated not only upon the high character of the proceedings at this meeting, but also, and perhaps to a greater degree, upon the continued spread of the interest taken in dermatology, as shown by the number of gentlemen newly elected to membership.

NEWS ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending September 2, 1884:

DISEASES.	Week ending Aug. 26.		Week ending Sept. 2.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid Fever.....	26	14	32	15
Scarlet Fever.....	32	6	25	4
Cerebro-spinal meningitis ..	2	2	4	4
Measles.....	47	11	37	11
Diphtheria.....	22	11	25	15
Yellow Fever.....	0	0	1	1

The Cholera in the South of Europe still maintains a threatening attitude, especially in Italy, where some ten or twelve considerable towns, notably Naples, are suffering, notwithstanding the extraordinary measures that were resorted to to keep the disease out of the country. There are reports also of cases in Spain. A press dispatch received from London on Thursday contained a report of a case having occurred in that city, coupled with the statement that the sanitary officials doubted its genuineness.

The New York Academy of Medicine was to have received a legacy of \$5,000 under the will of the late Dr. John G. Adams, but it is now stated that, by a recent codicil, the bequest to the Academy is limited to the greater part of the books forming Dr. Adams's library. A member of the profession, who is not a member of the Academy, authorizes us to say that he will give the sum of \$500 toward the amount that would have been received by the Academy but for the codicil, provided the remainder of the \$5,000 is raised by private subscription.

The Inventor of Chlorodyne, Dr. J. Collis Browne, formerly of the British army, is reported to have died lately.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from August 23, 1884, to August 31, 1884:*

HEAD, JOHN F., Colonel, and Surgeon. Granted leave of absence for four months. S. O. 201, A. G. O., August 27, 1884.

WOODHULL, A. A., Major and Surgeon. Detailed as member of Medical Examining Board at United States Military Academy, West Point, N. Y., vice Captain R. H. White, relieved. Upon adjournment of the board to return to his proper station. S. O. 201, C. S., A. G. O.

LIPPINCOTT, HENRY. Promoted Major and Surgeon, to rank from August 17, 1884, vice Woodward, deceased.

BARTHOLO, J. H., Captain and Assistant Surgeon. Relieved from duty in Department of the Columbia, and to report in person to commanding general, Department of Texas, for assignment to duty. S. O. 199, A. G. O., August 25, 1884.

FINLEY, J. A., Captain and Assistant Surgeon. The leave of

absence granted him in S. O. 91, C. S., Department of Texas, extended two months. S. O. 198, A. G. O., August 23, 1884.

TAYLOR, M. E., Captain and Assistant Surgeon. Granted leave of absence for four months, to take effect on arrival of a medical officer at David's Island, N. Y., to replace him. S. O. 200, A. G. O., August 26, 1884.

GIBSON, R. J., First Lieutenant and Assistant Surgeon. Relieved from duty in Department of the Missouri and ordered to Department of California for duty. S. O. 202, A. G. O., August 28, 1884.

DIETZ, WILLIAM D., First Lieutenant and Assistant Surgeon. Relieved from duty at the Military Academy, West Point, N. Y., and ordered to the Department of the Missouri for duty. S. O. 202, A. G. O., August 28, 1884.

McCRAW, WALTER D. Appointed Assistant Surgeon with rank of First Lieutenant, to date from August 20, 1884.

Society Meetings for the Coming Week:

MONDAY, September 8th: American Association for the Advancement of Science (Philadelphia—fourth day); New York Ophthalmological Society (private); New York Medico-Historical Society (private); New York Academy of Sciences (Section in Chemistry and Technology).

TUESDAY, September 9th: American Association for the Advancement of Science (fifth day); Medical Society of Virginia (Rawley Springs—first day); Medical Societies of the Counties of Chemung, Rensselaer, and Ulster, N. Y.; Essex, N. J., Medical Association; Trenton, N. J., Medical Association (private).

WEDNESDAY, September 10th: American Association for the Advancement of Science (sixth day); Medical Society of Virginia (second day); New York Pathological Society: American Microscopical Society of the City of New York; New York Medico-Legal Society; Medical Societies of the Counties of Cayuga and Montgomery, N. Y., and Middlesex, N. J.

THURSDAY, September 11th: Medical Society of Virginia (third day); Harlem Medical Association.

FRIDAY, September 12th: Medical Society of Virginia (fourth day); Yorkville Medical Association (private); Medical Society of the Town of Saugerties, N. Y.

OBITUARY NOTES.

Dr. Robert J. Heinmuller died on Saturday last at his residence, No. 222 East Thirty-second Street, at the age of twenty-nine. He was graduated from the Medical Department of the University of the City of New York in 1875. In 1881 he became connected with the Health Department, and occupied the position of Assistant Sanitary Inspector in the Bureau of Contagious Diseases. He was a member of the Medical Society of the County of New York and of the Physicians' Mutual Aid Association. His death is said to have been due to apoplexy.

Proceedings of Societies

AMERICAN DERMATOLOGICAL ASSOCIATION.

Eighth Annual Meeting, held at Highland Falls, N. Y., Wednesday, Thursday, and Friday, August 27, 28, and 29, 1884.

Wednesday's Proceedings.

The President's Introductory Remarks.—After the report of the Council and the transaction of some routine business, the President, Dr. R. W. TAYLOR, of New York, made a few introductory remarks, in which he spoke of the high posi-

tion occupied by the association in the dermatological world, and extended a hearty welcome to the members. He then declared the meeting open for scientific work.

A Case of Xanthoma Multiplex was the title of the first paper, by Dr. W. A. HARDWAY, of St. Louis. The patient was a man, aged forty-four, who was well until the age of thirty, with the exception of hyperidrosis of the feet, from which he had long suffered. For some years he had worked eight hours daily before a hot fire, which caused excessive general sweating. This ceased after a while, however, giving place to intense burning and itching. Two years later he noticed that he was turning yellow, and his health began to run down. When first seen, some years later, his right side was of a bronzed hue, his left side yellow. The skin disease on account of which he presented himself had appeared four years before. He said that he had suffered from intolerable itching for twelve years. He usually had a ravenous appetite, but felt weak and was often dizzy. He was found to have pulmonary emphysema, and said that he often had attacks of asthma. His temperature was normal; the urine was acid, of the specific gravity of 1.016, and contained a trace of sugar, but no albumin or casts. The liver was much enlarged downward and laterally, thickened, and nodulated. The skin was bronzed and almost black in some places. The conjunctiva was also stained. Marks of furious, long-continued scratching were evident over the whole skin, and the hair was almost destroyed in many places. On the eyelids, lips, and chin were numerous well marked patches of xanthoma. Around the elbows, on the wrists, the backs of the hands, and the feet, also on the buttocks, thighs, and legs, were a very large number of xanthomatous tubercles, varying from a pin-head to a hickory-nut in size, a few being umbilicated, and some, on the face, perforated by hairs. The palms of the hands also presented many small tubercles and bands of yellow infiltrated tissue. One of the joints of the second finger of the left hand was much enlarged, and all the malleoli were enlarged (by bone) to twice their natural size. A number of tumors could be recognized in the subcutaneous fat-tissue of various portions of the body, and a distinct bony node could be seen over the front of the head of each tibia.

The greater portion of the trunk was free from tubercles, but on the right side, covering the site of the eleventh and twelfth and a part of the ninth and tenth ribs, were many groups, composed of a large number of yellow xanthomatous tubercles having the exact distribution of the vesicles of herpes zoster, stopping at the median line before and behind. In some parts of this extensive patch of disease the tubercles had become confluent. These had existed for a long time, and the patient gave an uncertain history of pain in the part before they appeared. The glans penis and the scrotum were involved, and there were small patches of yellow-discolored tissue in the mucous membrane of the inner aspect of the cheeks and of that of the soft palate, and also in those of the larynx and trachea. The general symptoms of which the patient complained were due to the emphysema and to a great distension of the abdomen. The tumors did not annoy him much, although they were also the seat of the itching which involved the whole skin.

The most striking points in the case, in the author's opinion, were the facts that the bronzing of the skin antedated the appearance of the xanthoma lesions by a number of years, and that the eruption was perfectly symmetrical, except on the trunk; the involvement of the mucous membranes of the air-passages and of internal organs was also very interesting. The distribution of the tubercles seated on the side of the trunk would seem to prove that the nerves might have some influence in the development of the lesions of xanthoma. He would also call particular attention to the presence of tubercles in the ar-

olar tissue and in the tendons, and to the probable implication of the bones, as shown by the enlargement of the tibiae and the malleoli. The fact that some of the growths had undergone involution was also striking. His study of this and other cases, and of the literature of the subject, led him to venture the suggestion that xanthoma was a diathetic affection, and that the connection of the disease with derangement of the liver was entirely secondary. He believed that when jaundice occurred it did so in consequence of a deposition of tubercles in the liver. He was also inclined to believe that in persons with what he would call the "xanthomatous diathesis" prolonged irritation or motion at certain points would cause a development of tubercles at those points, as over the articulations, on the eyelids, etc. Finally, he thought it possible that the lesions on the chest-wall might be due to an abortive attack of herpes zoster.

Dr. S. SHERWELL, of Brooklyn, said that he had never succeeded in tracing a connection between the disease under consideration and hepatic affections. He had seen quite a number of cases of the disease, and the patients were all healthy people otherwise.

Dr. J. C. WHITE, of Boston, said that it was extremely rare to find jaundice associated with xanthoma; he himself had noticed the connection only once in many cases that he had seen. He had seen only one case of xanthoma multiplex. He did not believe that there was anything of a diathetic nature at the bottom of xanthoma, but he had seen several cases in one and the same family.

Dr. L. A. DUHRING, of Philadelphia, called attention to the fact that the pruritus began with the jaundice and not with the xanthoma. He was inclined to believe in a connection between the tumors met with in this disease and those occurring in some forms of the affection described as urticaria pigmentosa, under which latter term, he thought, two different classes of affection were often described.

The PRESIDENT agreed with the other speakers in denying any connection between xanthoma and a diathesis, as he had found the disease in the healthy as often as in those suffering from gout, rheumatism, or other diathetic conditions. He did not believe that involution of the lesions, if it ever took place, would occur on the face, where the spots, he believed, were always permanent.

Dr. HARDWAY said that he had only the patient's statement to prove that involution of some of the lesions had taken place. He regretted that no one had thrown any light on the bone lesions of the case, which, to him, were involved in great obscurity as regarded their relations to the disease.

A Clinical Study of Lupus Erythematosus as it affects the Hand.—At the evening session Dr. J. NEVINS HYDE, of Chicago, read a paper with this title. He described in detail the symptoms of the disease as exhibited by four patients under his observation—three females and one male. In each the discoid variety of the disease was shown upon one hand, and of the four patients only one had facial lesions, which came out some years after the disease was fully developed on the hand. In several of the cases the fingers were involved, and in one the palm was not affected. The paper terminated by a presentation of other cases, recorded in literature, of the same form of the affection. The prominent features in each case were tabulated. From this comparison it appeared that the average age of the patients was somewhat over twenty years, and that almost two thirds of them were women, thus confirming the observations made by Kaposi in 1882. The cases in which the hands were affected had all been recorded by either American or English observers.

Dr. WHITE stated that he had seen three or four cases of lupus erythematosus in which the hands alone were affected.

He had also seen cases of the disseminated form of the disease, in which the hands were free. In none of them had he been able to recognize any evidences of a depraved condition of the system. He thought that cases of the disease in which the palms were implicated were not extremely rare, but that the affection was often overlooked, being regarded as some other disease.

Dr. SHERWELL had never seen the disease in question on the palms, but had seen it on the backs of the hands.

The PRESIDENT had seen two cases of the affection as described in the paper—one in a man, the other in a woman. Both were in good health and seemed free from diathetic taint.

Dr. HYDE stated that his main object in writing the paper had been to point out the ease with which the affection could be recognized, and to add to the literature of the subject.

A Suggestion for the Treatment of Acne and Acne Rosacea in the Male Subject was the title of the next paper, read by Dr. SHERWELL. He said that too little attention had been paid to disturbances of the genital tract as causes of these diseases, and gave credit to Piffard and Hyde for having recognized their importance in this regard. He then spoke of the occurrence of chronic congestion and hyperæsthesia of the male urethra in some cases, and recommended for its relief the use of cold-steel urethral sounds. He concluded by detailing two cases which were thus cured.

Dr. A. R. ROBINSON, of New York, thought the suggestion a sensible one, and that benefit would result from heeding it in some cases.

Dr. G. H. FOX, of New York, spoke of the liability of physicians to ascribe results to a certain plan of treatment when the improvement might have been due to a change in regimen on the part of the patient unknown to the physician. He also thought well of Dr. Sherwell's suggestion.

A Case of Unilateral Chromidrosis (?).—Under this title, Dr. WHITE read a paper which contained a report of the case of a workman in a sugar refinery whose shirt had been stained a bright-yellow color for several months. After wearing it a few days, the left side all the way down seemed as if stained by saffron. There was apparently no excessive perspiration of that side of the body, nor were the garments stained elsewhere. An analysis of the material absorbed by the shirt showed that it was of an oily character, readily extracted by ether, and yielding peculiar absorption bands when examined with the spectroscope. Its nature was not more definitely determined. It was also uncertain whether it was secreted by the sudoriparous or by the sebaceous glands. The color was not due to the presence of bacteria, which had been found in some of the few cases of yellow sweat reported. The affection was immediately controlled by local treatment, and had not recurred four months later.

Dr. DUHRING thought the description read gave an accurate notion of the disease, and he saw no reason to doubt that it was a case of genuine chromidrosis. He had recently seen a case of red sweat, in a young woman, where it occurred in spots over the body.

Dr. FOX had never seen any cases of genuine chromidrosis. He spoke of one which he had thought was genuine, but which was found to be due to the red color from a blanket having been rubbed off on the face during the night.

Dr. HARDAWAY and Dr. HYDE had seen cases almost identical with that mentioned by the last speaker.

Dr. WHITE said that the query-mark after the title of the paper was placed there because he was uncertain as to whether the yellow matter came from the sweat or from the sebaceous glands.

Cases of Arsenical Dermatitis.—Dr. WHITE read another

paper, in which he gave brief notes of cases of supposed arsenical dermatitis, in connection with the report of a train of uncommon cutaneous manifestations in a mother and her newborn child, the birth having taken place in a chamber the walls of which were covered with arsenical pigments. The object of the paper was to raise the question, how far the apparent "pityriasis maculata et circinata" in the mother was dependent upon the presence of arsenical compounds in the atmosphere of the lying-in chamber, for it was an affection concerning the ætiological relations of which nothing was known. In the infant the symptoms were of an eczematous type, with unusual manifestations of intertrigo.

Dr. HYDE remarked that the number of artificial dermatoses was multiplying rapidly, and thought that the question as to a possible artificial origin should always be raised in doubtful cases.

Dr. SHERWELL said that the recital of the cases had made him think that certain obscure cases of bullous eruption now under his observation might be cases of this nature.

Dr. WHITE thought it more likely, from the description given, that they were cases of an unusual form of poisoning from the bites of mosquitoes, of which he had seen many.

Thursday's Proceedings.

Dermatitis Herpetiformis and its Relations to Impetigo Herpetiformis was the title of a paper by Dr. DUHRING, which was practically a synopsis of one read at the last meeting of the American Medical Association, and discussed in its final portion the relations of the disease treated of to the affection long ago described by Hebra under the name impetigo herpetiformis, which usually occurred in pregnant or puerperal women, and generally resulted fatally. The paper aimed to establish the identity of the two affections, and also that of a number of diseases closely resembling the cases of Hebra, which had been described under a variety of names, such as pemphigus pruriginosus, herpes chronicus, herpes gestationis, etc.

Dr. FOX thought great credit was due the author for taking this comprehensive view of many varying forms of disease, the proper place of which in dermatological nomenclature had so puzzled observers. He now felt confident that they all belonged in the class which Dr. Duhring had established. He then briefly reported a case recently under his care, which he had called chronic erythema multiforme pigmentosum. The eruption consisted of blebs all over the body and extremities, with here and there ridges of a papular form of lesions, attended with swelling of the arms and legs. There were many cicatrices over the body, left by the blebs; and the skin, which before the onset of the disease was said to have been unusually white, was deeply pigmented. The patient had an outbreak of blebs at each menstrual period. She had improved greatly under the use of arsenic, but he did not anticipate complete recovery. It seemed to him that the name impetigo multiformis would better define the disease in this case, however, than that suggested by Dr. Duhring.

Dr. H. G. PIFFARD, of New York, said that the disease which the author of the paper had so ably described was rare, and its manifestations were not sharply defined. He felt sure that many cases hitherto described under various names might with perfect propriety be comprised in the comprehensive view of the matter taken by Dr. Duhring. He himself did not believe that the affection was in any manner allied to herpes, taking its most typical form, zoster, as a standard of comparison. Morphologically, it could not be classed with that affection, the lesions of the disease described in the paper being too multiform. He had recently seen a case of the affection, which he described at length.

Dr. WHITE was convinced that the more such cases were studied the greater would be the difficulty experienced in classifying them. He was inclined to think that the term "multiform dermatitis" would apply to them better than the others which had been suggested. He was not quite ready to admit that the writer of the paper had proved the existence of an absolute connection of the cases he had brought forward with those of Hebra, however. Still, as he had never seen a case such as Hebra had depicted, he would regard the question as still undecided. He saw no reason to accept the view advanced by the author of the paper that the disease was usually of a neurotic origin. He thought that by the general practitioner the disease was apt to be mistaken for eczema.

Dr. HARDAWAY thought that a certain number of cases, in which the lesions were papules, vesicles, and pustules, could properly bear the title "herpetiform." He believed there was a neurotic basis to many of them.

Dr. ROBINSON spoke of three cases of the disease he had seen, and showed a colored drawing illustrating one of them. The eruption was polymorphous, looking in some places like ringworm, in others like pemphigus, and in others almost like keloid. He had recognized a well-marked neurotic element in the case, had put the patient, a boy of ten years, on the use of nine drops of Fowler's solution three times daily, and great improvement had followed.

Dr. SHERWELL believed that Hebra's cases had been of a septic origin, and that they resembled closely many cases which he had seen in military hospitals infected with hospital gangrene.

Dr. DUHRING stated that his paper was based upon the study of sixteen or seventeen cases of the affection which had been under his observation for a number of years. He could not regard the objection which had been advanced against the qualifying adjective herpetiform as valid, since in many of the cases there was from the first a distinctly herpetic character. He reiterated his opinion that the difference between his cases and those of Hebra was simply one of degree.

Friday's Proceedings.

A Case of late Cutaneous Syphilis (Acneiform Syphiloderm of the Nose) illustrating the occasional Necessity of Large Doses of Potassium Iodide.—A paper with this title, by Dr. H. W. STELWAGON, of Philadelphia, was read by the secretary, in the absence of the author.

The evidences of syphilis in the case were obscure, and the diagnosis was for a time uncertain. Only after the patient had for some time taken drachm-doses of the iodide of potassium three times daily did the disease begin to yield.

A Case of Vitiligo involving the Whole Surface was the title of another paper by Dr. STELWAGON, also read by the secretary. It described accurately the progress of the disease and the appearance presented by the patient after its full development.

A Case of General Idiopathic Atrophy of the Skin.—Dr. HARDAWAY read a paper with this title, and showed photographs illustrating it. The patient was a blind man, twenty-three years old, who had a blind sister who, he said, had the same skin disease. His face presented a rosaceous aspect, the skin being thickened and reddened. There were scars around the mouth, and the lips presented a strumous appearance. The trunk had a checkered shining aspect, due to many pigmented spots of various sizes and atrophic patches, over which the skin was tense and glistening, and could be picked up with difficulty. No dilated vessels were visible. The skin and muscles of the hand were atrophied, and the sides of the fingers were adherent to each other over half their extent. Examination of the eyes

showed xerosis of the conjunctiva, adhesion of the lids to the globes, and corneal opacities.

Dr. DUHRING said that, beyond atrophy, there were no special features which distinguished the disease under consideration, neither dilated vessels nor pigmentation being essential features. We met with cases of all grades of severity, from those having no tendency to degeneration to those developing carcinoma or sarcoma.

The PRESIDENT said that, in his opinion, the condition of the skin in Dr. Hardaway's case was not like that met with in angioma pigmentosum et atrophicum, this patient presenting simply an ill-nourished, senile-like condition of his integument. The process in him had not been active enough to lead to neoplastic formations.

Dr. WHITE was unable to agree with Dr. Duhring as to the affinity which he believed to exist between the different varieties of atrophic processes in the skin, which varied widely from one another. In one class we met with loss of pigment and a deposition of epithelium, without changes in the corium; in another hypertrophy of the corium was a marked feature; in a third variety new growths were developed. He did not think the case reported could be associated with these last.

Miliaria and Sudamina.—Dr. ROBINSON then read a paper on this subject. He first quoted the views held by different authors as to the true nature of a dew-drop-like eruption described under a number of names, such as miliaria alba, m. rubra, sudamina, eczema solare, lichen tropicus, etc., and showed that they conflicted greatly. His object in preparing the paper had been to attempt to clearly define the true nature of the affections under consideration, the conclusions he had reached being based upon original microscopical studies. He concluded that miliaria alba and m. rubra were forms of eczema, due to heat, irritating clothing, acrid sweat, etc. He therefore thought that the term should be dropped.

The disease known as sudamina he had found to be not an inflammatory affection, but a disturbance of the sweat-glands, the result of a hyperidrosis. The paper was illustrated by many drawings.

Dr. HARDAWAY objected to the use of the term *eczematous* as applied to the affection under consideration, which was a true dermatitis, while eczema was a distinct disease.

Dr. HYDE was inclined to fully adopt the views advocated in the paper. He thought that miliaria and sudamina were due solely to accidents occurring in the course of an eczema.

Dr. WHITE thought that any attempt to lessen the confusion in dermatological nomenclature should be welcomed. He regarded the position taken by the author of the paper as the only philosophical one. He himself recognized no such diseases as miliaria alba and rubra as distinct affections, but regarded them merely as forms of eczema. The question was, after all, one of definition only.

Dr. DUHRING, while giving full credit to the author of the paper for the valuable nature of his work, was still not prepared to look upon miliaria alba as a form of eczema. The clinical histories of the two diseases varied widely, the former being acute and self-limited, the other tending to a chronic course.

A Peculiar Ringed Affection of the Glans and Prepuce was the title of the next paper, by the PRESIDENT, Dr. R. W. TAYLOR. He described three cases of the affection, seen during the past ten years. The patients were all from forty to forty-five years of age, and all free from syphilis. Marked neurotic disturbances preceded and attended the outbreak in all the cases, and one patient had had an attack of orchio-epididymitis and recurring attacks of balanoposthitis, and in another a chancre had been roughly cauterized, which led to long-continued swelling and inflammatory disturbances. In all the cases the

disease appeared in the form of rings covered with thin, firmly adherent scales, and seated upon an apparently normal mucous membrane. These lesions remained for a long time stationary, neither spreading nor disappearing. Disagreeable sensations in and around the affected parts were complained of. He had recognized the existence of a marked neurotic element in all the cases. The disease proved obstinate, but finally yielded to increasing doses of arsenic persistently used. The author was loath to regard the disease as *sui generis*, but, in attempting a diagnosis, he had carefully eliminated syphilis, tinea circinata, and psoriasis.

Dr. DUHRING had seen several cases of the disease, he thought. In his cases there were no subjective symptoms, however, but the gross appearances and the course and evolution of the lesions had irresistibly suggested lupus erythematosus. He was inclined to believe that the president's cases were also instances of that affection.

Dr. WHITE had had one case under observation for some time. He had made no positive diagnosis, and the patient had not recovered.

Dr. HARDWAY described a similar case in a man who had had psoriasis. The lesion on the glans, however, was totally unlike psoriasis.

Dr. WIGGLESWORTH, of Boston, cited the case of a man whom he had cured of leukoplakia buccalis, and who afterward developed a lesion on the penis like those described by the president. It finally disappeared under the use of pure carbolic acid.

The PRESIDENT was confident that his cases were not instances of lupus erythematosus, as they had not developed from papules, there were no recurrent attacks of hyperæmia, the patches were not indurated, and there was no cicatrization.

The following-named gentlemen were elected officers for the ensuing year: Dr. W. A. HARDWAY, of St. Louis, president; Dr. J. C. GRAHAM, of Toronto, and Dr. A. VAN HARMINGEN, of Philadelphia, vice-presidents; Dr. W. T. ALEXANDER, of New York, secretary; and Dr. GEORGE H. ROSE, of Baltimore, treasurer.

Mr. JONATHAN HUTCHINSON, of London, England, was elected an honorary member; and the following-named gentlemen were elected active members: Dr. GEORGE H. TILDEN, of Boston; Dr. A. R. MORISON, of Baltimore; Dr. F. O. CURTIS, of Albany; and Dr. L. N. DENSLOW, of Minneapolis.

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

Meeting of July 15, 1884.

The President, Dr. JOHN A. MCCORKLE, in the chair.

The Treatment of Fracture of the Patella was the subject of a paper read by Dr. J. H. HOBART BURGE. [See page 259.]

Dr. HOPKINS said he would like to call attention to the peculiarities of some cases of fracture of the patella. He supposed he was somewhat heretical in the belief that we made too much of fractures of the patella. In the larger proportion of cases, so far as the use of the limb was concerned, it made little difference whether the union was ligamentous or bony, so called. In the vast majority of cases the union was undoubtedly ligamentous. We saw the fragments sometimes separated to a great distance without causing any very great lameness or inconvenience. He thought that often the bone could be fractured without having the ligament broken, as the latter was distributed principally on either side of the patella, scarcely any fibers being found on the inner or posterior surface, and only a few on the anterior surface of the bone. In such a fracture as this it made little difference whether the union was ligamentous or not, whether the

bones were brought together closely or not, or whether there was some ligament intervening. He remembered a case which was remarkable in that there was a fracture of both patellæ. The injury was produced in going down stairs. In that case two fingers could be laid between the fragments. The person was not at all lame subsequently. There ought to be a distinction made between fracture of the ligament and bone and fracture of the bone, which he believed could exist alone. If the ligament was ruptured, there ought to be an apparatus to bring the parts together, or there would be lameness. In the case to which he had referred the fragments were three inches and a half apart, and the woman walked without apparent lameness. He had had a note from her, which, with the permission of the society, he would read, in which she described her injury, and which he thought might be of interest. There was a triangular depression between the lower end of the femur and the head of the tibia, into which he could lay all the fingers of his hand without their rising above the surface.

He then read the letter, as follows:

"My knee-pan was broken September 3, 1877. When I broke it I was standing on the stair and my knee just gave way under me. I was not able to move; I felt powerless, and did not know what was the matter until the doctor examined it. I was laid up from September 3d to January 7th. The pan of my knee has never been removed, half being above and half below my knee. I have no power to lift my leg off the ground [except so far as is required in walking], but that does not interfere with my walking, for I do not walk lame, and the only inconvenience I suffer is going up and down stairs, as I can only take one step at a time. Whenever I am tired or weak it bends in the wrong direction—so much so sometimes that I fall down. My knee was well enough for me to travel with a splint on, and I came home to Canada on the 7th of January. After a while I thought it was well enough to walk without a splint, so I took it off, and during the winter had seven heavy falls on my knee, which [I forced] it [the fragments] farther and farther apart, and left it as it now is."

He cited this case to show how much a person could do without really having any union of the bone at all. Of course, if the patient had some apparatus to prevent the knee from going backward while walking down stairs, she could walk as well as anybody. He had advised her to get such an appliance. This was an extreme case, and he was surprised at the way she walked with really no patella to help her. He thought the case might be of interest in connection with Dr. Burge's paper.

Recent Advances in the Treatment of Wounds was the subject of remarks by Dr. LEWIS S. PILCHER. [See page 254.]

G. R. BUTLER, M. D., *Secretary pro tem.*

NEW YORK OBSTETRICAL SOCIETY.

A STATED meeting was held April 15, 1884, WILLIAM M. POLK, M. D., president, in the chair.

Carcinoma of the Breast.—Dr. M. A. Pallen presented a specimen of carcinoma of the breast removed on the 27th of March by a double-flap operation, the incision extending about ten inches, in nearly a horizontal direction, across the breast. The patient was also seen by Dr. Thomas. There was considerable hæmorrhage, a number of vessels had to be tied, and it was considered advisable to pass a deep silver suture and bring the lips of the inner angle of the wound firmly together. Forty minutes after the operation hæmorrhage again occurred, which was controlled with ligatures and deep wire sutures. As many as eight bleeding vessels were tied and five or six silver-wire sutures inserted deep in closing the wound again. A drainage-tube was inserted. Twenty-four hours later the temperature

began to rise and the wound was constantly bathed with a solution of carbolic acid in water and with Listerine. Whenever the wound was flooded, by closing the distal end of the tube, the temperature immediately fell. Symptoms of septicæmia continued for nine days, and then the patient began to recover. The highest temperature was 104.2° F.

This was the only instance in which Dr. Pallen had practiced Dr. Thoma's method by horizontal incisions. For cases in which the tumor was non-malignant, and the breast not flabby or fatty, he thought it probably as good a method as that which he, and most other surgeons, had generally practiced—namely, by a long vertical incision. The latter method gave better opportunity for drainage, and was preferable, he thought, to the former, especially in cases in which the breasts were large.

Dr. T. G. THOMAS said he could recognize, as Dr. Pallen had mentioned, the great advantage of ease of drainage by the up-and-down incision, but it seemed to him that the chief advantage of the horizontal incision had been overlooked. It was a matter of primary importance in removing the breast to open the way to the axillary space, that enlarged glands might be sought for and, if found, be removed. Surgeons were generally agreed that, if the operation was to be done at all, the axillary region should be thoroughly explored and all traces of malignant disease be extirpated. It was true that after the up-and-down incision the external flap could be lifted and the axillary space be investigated, but, in case hæmorrhage should be considerable, it would be almost impossible to arrest it without then making a horizontal incision, to find the vessels and tie them. Only the day before the meeting he had removed a large mammary tumor, with the assistance of Dr. Chambers, in which some of the axillary glands had attained to the size of marbles. It was necessary to carry the incision well back to the posterior border of the axilla, and dissect out the enlarged glands with great care, to avoid wounding plexuses of nerves and vessels which were plainly visible. Considerable hæmorrhage occurred, and he had to cut quite deep to control it. It was necessary, he thought, in every case of carcinoma of the breast to explore the axillary region by an incision, for inability to feel the enlarged glands through the integument did not prove their absence. He asked Dr. Pallen if he did not think the horizontal incision was preferable where it was necessary to explore the axillary region.

Dr. Pallen thought that where it was necessary to remove the axillary glands he should make the horizontal incision. If that were not necessary, he should prefer the longitudinal incision, as being more rapid and easier to make, and as affording better drainage.

Supra-vaginal Myomotomy.—Dr. T. A. EMMET presented a uterus which he had removed a week before from a woman, forty-eight years of age, who had menstruated very freely for many years. About two years ago she had first noticed the development of an abdominal tumor, supposed to be a uterine fibroid. She was under the care of Dr. Wilson, of Baltimore, who felt positive that the tumor was a fibroid. After having done all that could be done in the way of treatment, he sent the patient to her home in Virginia. But about six months ago the abdomen began to increase rapidly in size, and, when she arrived in New York, the abdominal measurement was forty-four inches. There was apparently a large fibrous tumor, and it was thought there might also be a cyst, but the solidity of feel was such that it was difficult to make a positive diagnosis. The patient's condition was too low to enable her to return home, and it was decided to do an operation. On opening the abdomen, the large tumor was found to be a dermoid cyst with very thick contents, containing teeth and a flat bone, but no

hair. After emptying the dermoid cyst the uterus was reached, and was found to contain a fibro-cyst. In accordance with the advice of Dr. Hunter and Dr. Lee, who were present, but against his own judgment, he determined to remove the uterus. First the dermoid cyst was removed, and afterward the other (the left) ovary, which was enlarged and cystic, was removed, together with the tube, according to Tait's method. Bleeding points were tied, and he then proceeded to dissect the bladder away from the uterus, and, having extended the dissection low down upon the neck, passed a double ligature around the cervix and the pedicle of the tumor; but only a small amount of the peritonæum, at the bottom of Douglas's *cul-de-sac*, was included in the ligature. Injury to the bladder was avoided by leaving it partially distended with urine while it was being separated from the uterus. The portion of peritonæum and bladder which had been dissected away from the tumor was then turned over the stump like a hood, and fastened at the bottom of the posterior *cul-de-sac* by fine silk sutures. Much to his surprise, the patient had done well since the operation, and he thought she would entirely recover. A peculiarity in the case was the fact that before and after the operation, until within two or three days, the respirations had been as many as thirty to the minute. The highest temperature reached was 102.2° F. The patient for some days past had been somewhat hysterical. Dr. Emmet believed that if myomotomy was to have a future, it would have to be done by covering the stump with the peritonæum and dropping it into the peritoneal cavity. In the cases in which he had operated before, the clamp was applied to the stump and fastened at the abdominal wound, but all the patients had died from one cause or another. It should be said, however, that Mr. Thornton had obtained success only in cases in which the clamp had been used. He thought it rare for a dermoid cyst to begin to develop so late in life, and then for the first time attract attention. He would not have operated upon this patient had it not been that she was losing an excessive amount of blood, and it was a curious fact, learned after removal of the tumor, that the hæmorrhage was in no way connected with the fibroid tumor, but was due to a polypus within the uterine canal which could not be reached or appreciated during life.

Dr. THOMAS said the desirability of covering the stump had been recognized for some time by Schröder and other European operators, and had been practiced more or less, but not according to the method described by Dr. Emmet. He should think that in some cases this method would prove very valuable indeed. That adopted by operators abroad, and which he had practiced in a number of cases, consisted in overlapping the stump with the remaining portions of the anterior and posterior surfaces of the uterus, as one would close the gap left after amputation of the breast. He thought the finding of the polypus as the cause of the hæmorrhage was an exceedingly interesting and important fact. He believed that as a rule, to which there were few exceptions, subperitoneal fibrous tumors very rarely caused hæmorrhage. Interstitial fibrous tumors rarely caused hæmorrhage unless they produced fungoid degeneration of the endometrium or were accompanied by a polypus. But interstitial fibroids would induce fungoid growths, and they were also often accompanied by small polypi, and Dr. Emmet's case was an illustration of that fact. He fully agreed with Dr. Emmet, however, that one could not have reached the polypus to remove it by the vagina. With regard to the development of dermoid cysts in patients advancing in age, he had operated in a number of cases in which the cyst had not become much distended with serum or pus until after the thirty-fifth or fortieth year. Of course the tumor had been present during the whole of life, but had been of small size.

The PRESIDENT inquired if it might not be possible to re-

move the polypoid growth in some other way than by the usual method, and thus avoid the necessity for so severe an operation as hysterectomy. Might not the os be reached by a lateral abdominal incision, as in laparo-elytrotomy?

Dr. THOMAS thought it would be difficult to reach the os in that manner, and especially to perform dilatation. It would seem that the less severe operation of the two would be to remove the uterus. He had removed the uterus from seventeen patients, nine of whom had recovered and the remainder had died. A large number had been treated by the clamp, and they had done remarkably well. A smaller number had been treated by simply returning the pedicle, and they had done badly. Most of the operations had been supra-vaginal; that is to say, he had removed the uterus as low down as possible. In a few instances he had been able to remove the entire uterus, and in several had even made a pedicle of the vagina. Dr. Hunter had also had a success recently with the clamp, and Dr. Dawson had had a patient recover in whose case the clamp was applied near the middle of the uterus.

The PRESIDENT remarked that thirteen out of fourteen patients treated by Dr. Keith by the extra-peritoneal method had recovered.

Cæsarean Section.—Dr. G. T. HARRISON reported a case. (See page 260.)

The PRESIDENT asked why the operation had been postponed until the 7th, labor having begun on the morning of the 5th; also what the source of septic infection was.

Dr. HARRISON replied that the os had not dilated, and there were no indications for earlier interference. He further stated that the cause of the peritonitis was septic infection, which doubtless took place from necessary manipulation of the uterus during the operation.

The PRESIDENT had inquired particularly with regard to the source of septic infection, because upon this he thought depended largely the test as to whether the Porro operation was to take the place of the old classical Cæsarean section. In this case and in the one reported by Dr. Garrigues, union of the uterine wound had taken place throughout its entire length, and there was no chance for the escape of the lochia into the peritoneal cavity a few hours after the operation. It appeared that Dr. Garrigues's patient had died on account of her reduced state before the operation was performed; Dr. Harrison's from peritonitis as a primary result of the operation, and not from an escape of septic poison through the uterine wound after the sutures had been applied. If infection had taken place later, through the wound in the uterus, it would militate against the Cæsarean operation.

Dr. THOMAS replied to a question by Dr. Harrison that he did not know what bearing the presence of the leg in the vagina would have upon laparo-elytrotomy. In the cases in which he had done the operation he had found it of advantage to have the vaginal canal unobstructed.

In two cases in which the PRESIDENT had performed Cæsarean section in the interest of the child, the mother being moribund, he had found the operation very much facilitated by making a large abdominal wound, turning the womb out and incising it on its posterior surface for the extraction of the child.

Lodgment of a Hair-Pin in the Uterine Cavity in an Attempt to Produce Abortion.—Dr. E. L. PARTRIDGE related the following case, which he had seen with Dr. J. H. Nesbit: The patient was about twenty-four years of age, the mother of one child. She had had several miscarriages, which, presumably, she herself had induced. Having missed a menstrual period on the 5th or 6th of March, she introduced a hair-pin into the womb, the point downward. The pin slipped from her fingers

and entered the womb, where she allowed it to remain until it should produce some symptoms. On the twenty-seventh of March Dr. Nesbit was called, who found the os closed, but the cervix enlarged and exceedingly sensitive. The body of the uterus was also very tender to the touch. The patient up to this time had been walking about. There was no elevation of the temperature. A tupelo tent was introduced, and, on the next day, two larger ones were used. In the evening the patient passed several very offensive-smelling clots, and during the night she flooded very freely. On the 29th Dr. Partridge was asked to see her. According to her reckoning, it was now about the seventh week of pregnancy. The temperature was 105° F., the pulse 120 a minute, and there was evidently pelvic peritonitis. The cervix was pretty well dilated, and Dr. Partridge was able to touch the hair-pin with the finger. The patient was anesthetized, and, after fifteen or twenty minutes, he was enabled to remove the foreign body. The finger first came in contact with a mass within the cervix, which evidently was the greater part of the ovum, that had lost its vitality two or three weeks previously. Passing the finger up still farther, it came in contact with the two bars of the hair-pin lying in the right side of the uterine cavity, one prong being engaged in the walls at a slightly higher point than the other. An ordinary uterine dressing forceps was introduced, one bar of the pin was seized near its extremity, and, after a little manipulation, it became disengaged. The other point was then lifted and the hair-pin was removed. Remaining fragments of membrane were scraped out, an intra-uterine douche of bichloride solution was administered, and the patient was put to bed. He was told that the patient rallied very nicely from the operation. The temperature on the morning of the operation had been 105°, while in the evening it fell to 102°-6°. She continued to improve from that day, Saturday, until the following Tuesday, at which time the temperature had come down to 99°-8°, the pulse to 102. That night she left her bed, in spite of the remonstrances of the nurse, and walked the floor for about twenty minutes. The next morning she presented signs of extensive peritonitis, and died on the following Monday, nine days after the removal of the hair-pin. The highest temperature was 103°-8°, and the highest pulse rate 142.

The case was interesting because it was unusual, and verified the fact that women did sometimes successfully resort to mechanical means for penetrating the uterine cavity to bring on abortion in their own persons.

Remote Puerperal Hæmorrhage.—Dr. THOMAS related cases of this accident. (See page 253.)

Extra-uterine Pregnancy.—Dr. THOMAS related his further experience with extra-uterine pregnancy since he had read a paper upon that subject at the Boston meeting of the American Gynecological Society, in 1882. Within a short time he had seen his thirtieth case, which he believed to be an unusual number to occur in the experience of one man. Twenty-four of the cases had been reported in the paper already mentioned. He would rapidly run over the history of the remaining six. One he was requested to see by Dr. Ferdinand Beach. The patient had suffered from amenorrhœa for three months. One day, when she was about to get into a street-car, the driver whipped up his horses and she was thrown violently upon her feet. She was suddenly taken with pain, went home, and remained in bed, and, after six weeks, when Dr. Thomas was requested to see her, she had become extremely emaciated, the pulse was over 120 to the minute, and she looked like a person suffering either from pulmonary consumption or from diabetes—the last stage of the disease. Both he and Dr. Beach thought the case would prove fatal. The patient had been vomiting steadily, and had had repeated attacks of pelvic peritonitis. This was three months after the cessation of the menses, and six weeks after

the fall. He could not be positive about the diagnosis, but told Dr. Beach that there had been a pelvic hæmatocele or repeated pelvic hæmatoceles. The patient's appearance was that of a person who had been blanched by hæmorrhage. The hæmatocele might have been due to extra-uterine pregnancy. She was put under the influence of an anæsthetic and the aspirating-needle was inserted, whereupon what appeared to be undoubted liquor amnii was withdrawn. There was some question whether the fluid might not have come from a pelvic cyst tightly bound down by inflammatory material. The patient now began to suffer intense pain, and died at nine o'clock that night. The next day a post-mortem examination was made, and a fetus of three months was found. There were small masses behind the uterus covered over with lymph and clots of blood, so that one could readily trace where different ruptures had taken place, by the blood which had been poured out forming a kind of hæmatocele. The intestines were bound together by masses of lymph covering over the whole tumor. The case was unquestionably one of abdominal pregnancy, but one for which nothing could have been done in the way of surgical procedure at any time when one would have thought of operating.

A short time after this Dr. Cushier requested him to see a lady who presented the following symptoms: She had become pregnant after a long period of sterility. All the symptoms of pregnancy existed. When she reached about the middle of the second month Dr. Cushier was called suddenly to see her, and found that she had been taken with a pelvic hæmatocele. She was entirely pulseless at the wrist, and the doctor recognized the rupture of an extra-uterine cyst at once. Although not expecting the patient to live an hour, she (Dr. Cushier) adopted the usual measures, and the patient rallied. Dr. Thomas saw her a few days later; at that time the pulse was very rapid, and all the symptoms of hæmatocele or of extra-uterine pregnancy, or of extra-uterine pregnancy with hæmatocele, existed. The doctor said the tumor was all the while increasing in size. It was believed that the patient was unquestionably pregnant, and the uterine cavity was explored with the curette, but it was found to be empty. The conclusion was then reached that a partial rupture of the foetal envelopes had taken place and was giving rise to hæmorrhage. Dr. Thomas regarded it as an exceedingly important point in extra-uterine pregnancy to recognize the fact that when partial rupture took place it did not necessarily destroy the child, nor was the rupture necessarily complete. This fact was illustrated by a case which he had once attended with Dr. Barker. A rupture had unquestionably taken place, for an hæmatocele was found. A post-mortem examination was made and the cyst was found to be perfect. It was distended to such an extent that one could look through its walls and see the fetus within. But a single vessel had ruptured, one of about the size of a knitting-needle, which had gone on pouring blood out into the peritoneal cavity until the woman, after four days of constant hæmorrhage, lost her life. This was a case in which the outer, muscular wall of the nidus had given way, while the membranes immediately surrounding the fetus were perfectly natural. The case of Dr. Cushier seemed to be one of this class. The faradaic battery was employed, one electrode being inserted within the rectum and the other applied to the abdominal surface. It was used one evening late, and the next morning there was a great improvement in the patient's condition. The treatment was continued, the mass subsided, and the patient entirely recovered.

The third case was seen with a surgeon of this city, in a patient who had been pregnant and was taken with symptoms of pelvic hæmatocele. Laparotomy was performed by the surgeon in charge. The patient died, but nothing else, however, could have been done for her.

The fourth case he saw about three weeks ago with Dr. Cocks, of Harlem. It was unquestionably a case of extra-uterine pregnancy, as the foetal mass could be felt to one side of the uterus, and the uterus itself could be distinctly mapped out on the other side. The cervix felt like that of a pregnant woman. The patient had never before failed to menstruate, and there were the usual signs of pregnancy in the breasts. Ballottement could be distinctly obtained in the foetal sac. She suffered from bearing-down pains, like the pains of abortion. The electrical current was used, and the patient began to improve immediately. There was a rapid subsidence of the tumor, and complete recovery had taken place.

The fifth case he saw about ten days ago, with Dr. Henry Griswold and Dr. Jewett. The patient had had one child years before. The only peculiarity about the present pregnancy, she said, related to the movements of the child. The ninth month having passed, she sent for Dr. Jewett, who found everything normal except that labor pains were terrific and there was no dilatation of the os. He remained with her twenty-four hours, and the labor pains gradually ceased, but still the os had not dilated. Dr. Griswold was sent for. The woman now declared that the child was dead, as she had up to this time felt its movements plainly, while now it was perfectly still. Dr. Griswold put the patient under an anæsthetic, dilated the uterine canal, inserted the whole hand into the vagina, introduced the index-finger completely into the uterus, and found that organ entirely empty. He then passed a large sound and found nothing except a little decidual membrane. The sound entered about four or five inches. When Dr. Thomas saw the patient he was able to introduce the finger into the uterus and verify what Dr. Griswold afterward told him had been his experience. He could feel the head of the child very distinctly through the vagina at the side of the uterus, but, unfortunately, the child was dead. Labor had come on, as it usually did in such cases, at term, and, no means being afforded for the escape of the child into the external world, it had died. But in one case, which came under the care of Dr. Jessup, of England, the condition had been recognized in time, an abdominal incision was made, and both the woman and the child were saved. Another case occurred in the practice of Dr. King, of Edisto Island, in South Carolina. Labor came on at the ninth month. Dr. King made an incision through the vaginal walls, applied a pair of forceps to the head, which was presenting, extracted a living child, and the mother recovered. In the present case the woman was in a similar condition, the only difference being that the child's interests had been sacrificed and the mother's alone remained to be considered. Dr. Thomas believed that surgical interference was not justifiable so long as the woman's health remained unaffected, and advised that she be allowed to go about her affairs until something should take place within the peritoneal cavity demanding interference. He had seen three such cases. In one case he had removed a full-grown child at the Woman's Hospital.

In another case, that of a woman living on Eighth Avenue, he removed a child weighing eight pounds, at the eighteenth month of abdominal pregnancy. In still another instance, that of a negress, sent to him by Dr. Young, he removed a child from the abdominal cavity weighing nine pounds, pregnancy having taken place eighteen months before. All three of the patients recovered. In the case now under observation, as in the other cases, the longer the fetus and its envelopes remained in the peritoneal cavity, the more would they be found to have undergone absorption and contraction, and the less would be the danger attending their removal. If they should begin to undergo decomposition and pus should form, an operation ought to be done without delay.

He had now related the histories of five cases of extra-uterine pregnancy seen the present season, and he believed that the conclusion which he meant to draw from these and the remaining one, which he would mention, was a perfectly legitimate one, namely, that in this condition surgical interference was to be avoided by every means in our power. He himself had three times tapped the tumor with a needle, in each case with a fatal result. These cases had already been placed upon record.

So far as cutting down upon the mass and removing it was concerned, every one knew what had so far been the result. We had reasons to suppose, however, that with antiseptic methods the future should give greater results from this procedure. But he had met with such wonderful results from the use of electricity that he must express his views loudly in favor of the adoption of that measure in every case in which a diagnosis could be made in time. One great advantage it possessed was that, in case it did no good, it could not do any harm.

The sixth case was that of a lady living out of the city, of whom Dr. Lambert, of Greenwich, N. Y., wrote to him. Dr. Thomas had treated the patient for sterility a short time before in his private hospital. She had gone away and become pregnant. Her physician said she had been pregnant for five months, and that something was wrong, but he was unable to decide what. She was brought to New York, and Dr. Thomas visited her, and found the uterus larger than normal, but evidently empty. He found what he believed to be a small fetus behind the uterus in the abdominal cavity. Dr. Jones was asked to see the patient, and, after making a careful examination, returned and told Dr. Thomas that he was confident the woman had an extra-uterine pregnancy; that he had explored the uterine cavity, and was perfectly satisfied of that fact. A consultation was held, to which Dr. Barker was added, and a great diversity of opinion existed with regard to the exact nature of the case. But it was decided that electricity should be employed, and within a few hours after its use there was an improvement in the symptoms; and within two months the tumor had almost entirely disappeared, so that the lady was up and riding about the country on horseback. The ground which Dr. Thomas took with regard to the employment of electricity was that it could do no harm. The patient was pregnant, and if, as some of the gentlemen supposed, the fetus was within the uterus, it could do no more than produce abortion, which would be perfectly justifiable, considering her physical and mental condition. Dr. Thomas, however, had had no doubt with regard to the existence of extra-uterine pregnancy.

Dr. R. WATTS asked whether, if there were rupture and active hemorrhage in a case of extra-uterine pregnancy, there would be any other remedy than laparotomy.

Dr. THOMAS said he would open the abdomen immediately under such circumstances.

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Reports on the Progress of Medicine.

CUTANEOUS AND VENEREAL DISEASES.

By EDWARD BENNET BRONSON, M. D.

Leprosy in Brazil.—Dr. J. McF. Gaston, who for a number of years resided upon the coast of Brazil, gives an account of his observations of leprosy in this region in the "New Or-

leans Medical and Surgical Journal." The medical faculty of Brazil, it is stated, regard the disease as contagious—as much so even as variola—and in many parts of the country *Uproseries* have been established outside the city walls, to which are consigned all lepers excepting those of the very wealthiest families. These hospitals are supported by the government. It is believed that hereditary influence plays an important part also in the production of leprosy, on account of the numerous instances in which children of leprosy parents become lepers. The conviction of the people that the disease is propagable from husband to wife, or *vice versa*, leads to the interruption of conjugal relations so soon as the disease appears in either one. When special hospitals do not exist, an affected member of a family is separated from the rest in a room apart, though often under the same roof.

The disease is not confined to any class of society, though people in the better walks of life are less subject to it than the humbler portions of the population living in the country. Contrary to the usual rule, according to Gaston's experience, leprosy was not found along the lowlands of that portion of the coast where he lived, but was frequently met with upon the elevated ridge just back of the coast, which in some places attained an altitude of two thousand feet. The only difference between the inhabitants of the two regions was that those upon the hills lived chiefly upon animal food, principally fresh pork, besides consuming a good deal of lard, while those of the lower lands along the coast lived upon fresh fish, together with an abundant diet of vegetables and fruit.

The disease begins, it is said, in most cases, with the appearance of anæsthetic pigmented spots upon the hands, associated with marked engorgement of the capillaries, giving them, when in a dependent position, a florid appearance, afterward becoming purplish, and finally of a bronze hue. After a few months tubercles make their appearance on the ears, nose, and eyebrows, the hairs of the latter falling out. Coffee-colored nodules appear later. The hands and feet become coffee-colored, with thickening and enlargement, which soon gives way to a shrinking of the tissues, forming characteristic depressions between the metacarpal bones of the thumb and forefinger. At this time there is usually a very considerable brownish discoloration of the ankles and the lower portion of the legs, but the rest of the body, which is protected by the clothing, preserves its natural appearance during the further progress of tissue degeneration about the face and extremities. Under the influence of depurative remedies, together with proper hygiene and diet, the disease may not, it is said, undergo any material aggravation for from one to two years; but, sooner or later, disintegration begins with ulceration and spontaneous amputation of joints, and finally death ends the scene. The writer believes there is no cure for the disease. In view of its tendency to become endemic in localities and of its probable contagiousness, he urges the importance of stringent measures being taken by the United States Government to exclude lepers from other countries, and to insist upon the absolute sequestration of those now here.

Neuritis in Zoster.—Dr. Dubler ("Arch. f. path. Anat. u. Physiol. u. f. klin. Med.," xvi, 1884) reports the results of the autopsies upon two persons who shortly before death had suffered from zoster. The first case was that of a woman, aged seventy-seven, who a year and a half before had had zoster of the region supplied by the eighth and ninth intercostal nerves, followed by recurrent attacks of neuralgia of the same region. The autopsy showed, besides the lesions of phthisis, a peristitis of the seventh, eighth, and ninth right ribs, upon which were three cheesy nodules in close relation to the sixth, seventh, eighth, and ninth intercostal nerves. These nerves, or their

branches, passed through the nodules to a greater or less extent, and only at the traversing part showed macroscopical changes—namely: thickening, adhesions to neighboring parts, and here and there reddening. Microscopical examination revealed a centripetal and centrifugal neuritis of the seventh, eighth, and ninth nerves, while the sixth nerve showed only slight interstitial softening at the site of the nodule. The neuritis affected both the nerve-fibers and the connective tissue, extending to the muscular branches and to the nerves of the subcutaneous connective tissue. The spinal ganglia of these nerves, the spinal cord, and the sympathetic were unaffected. On the left side there was a diseased ganglion.

The second case was that of a woman, aged seventy-one, who had had a zoster over the lower intercostal region, followed by neuralgia, some three months before death. She died of a chronic double nephritis and a left-side pneumonia. Microscopical examination showed a normal spinal cord, and a neuritis of the ninth and tenth right intercostal nerves, with parenchymatous and interstitial changes. In the ninth spinal ganglion there were inflammatory alterations in certain parts where the nerve-bundles passed through; otherwise the ganglion was normal, at least so far as the ganglion-cells were concerned. In the absence of any apparent cause for the neuritis, the author calls this a case of spontaneous idiopathic zoster.

He maintains with regard to these cases that the hypothesis of a trophoneurosis is unnecessary, inasmuch as in both there was a direct extension of a neuritis to the skin. They further show, he maintains, that the neuritis of zoster may affect not only the sensitive, but also the motor nerve-fibers, which explains the fact that paralysis may be associated with zoster.

As to the etiology, Dubler maintains that anything capable of producing a neuritis may cause zoster. Hence, it may arise in consequence of traumatism, extension of inflammation in neighboring parts, from certain toxic agencies—such as carbonic acid, arsenical poisoning, and infectious miasms—from rheumatism, or, on the other hand, it may be due to a spontaneous neuritis.

Comedones in Children.—One might infer, from the account given in most treatises on diseases of the skin, that comedone were never met with until after puberty. Dr. H. R. Crocker ("Lancet," April 19, 1884) reports a number of cases in which "black heads" were observed in children. They generally appeared in locations subjected to heat and moisture, such as on the forehead under the hat-band. According to Crocker, comedones in children differ from those occurring in the adult in being mainly dependent upon local causes; in their greater tendency to form groups, the individual lesions being more closely set together; in their tendency to involve the hairy scalp; and in being readily amenable to treatment.

The Treatment of Lupus.—Schwimmer ("Wien. med. Wochenschrift," 1884, Nos. 20 to 22) strongly advocates the employment of pyrogallic acid and mercurial plaster for the treatment of lupus, and he gives a series of cases in which these remedies were followed by excellent results. The peculiarity of his plan is that the remedies are used in sequence, the action of one being supplemented by that of the other. He first applies vaseline to the diseased part till all crusts are removed, after which a ten-per-cent. ointment of pyrogallic acid and vaseline is applied, the dressing being changed two or three times a day and continued for from four to eight days, according to the activity of the process and the effect produced. Vaseline is then again used for a few days until the irritant effect of the acid is moderated, and then the mercurial plaster is applied and worn for from ten to fourteen days, the plaster being

changed two or three times a day if there is much discharge, otherwise only once a day. After two weeks, if any nodules are seen in the cicatrix, the same cyclus of treatment is repeated, beginning with the vaseline as before, but using the pyrogallic acid this time for only three or four days. Generally, the writer states, two courses will be enough to cure the disease, though in some cases a third may be required. The duration of the treatment by this method is said to be from three to four months.

Lupus of the Vulvo-anal Region.—Several cases of this form of lupus—which, perhaps, comes more often under the observation of the gynecologist than of the dermatologist—are reported by Macdonald in the "Edinburgh Medical Journal" for April, 1884. The importance of bearing in mind the possibility of the occurrence of lupus in the region of the perineum is urged on account of the liability of mistaking it for either epithelioma or syphilis. The differential diagnosis is made in the same way as when the disease occurs upon the face. It is described as beginning in the vulvo-anal region in the form of elevated tubercles, which break down and ulcerate. The general appearance of lupus in this location is similar to what it is upon the face, only the ulceration is more extensive and the cicatricial contraction greater and more disfiguring. In the writer's cases the disease crept over the anterior edge of the perineum and tended to extend a short distance into the vagina. While it invaded the perineal and vulvar regions very freely, it was slow to enter the vagina, and caused much less hypertrophy in the latter than in the former regions. The appearance of the disease upon the perineum was in one of his cases that of a shallow ulcer with distinctly indurated but not undermined edges. The writer expresses the opinion that lupus is neither a tubercular nor a strumous affection, but a local disease starting from some local irritation or injury, a history of which, in several of his cited cases, was obtainable. For treatment he advocates removal with the knife.

Pasty Applications in the Treatment of Skin Diseases.—In many inflammatory diseases of the skin, but especially in certain forms of eczema, ointments are not well borne. They are always dirty and difficult to remove, and in many cases tend to aggravate the irritation of the disease. Many substitutes have been proposed, among which, perhaps, Lassar's paste—consisting of starch, zinc, and vaseline—is most widely known, and has proved a most valuable addition to the materia medica of dermatology. Unna, who has made the subject of pasty applications to the skin an especial study, makes an interesting and useful report of his experiments in this direction in the "Monatsheft für praktische Dermatologie" (1884, iii). The first preparation which he devised, and which is commended on account of its simplicity and cheapness as well as of its excellent effect upon moist cutaneous diseases, is a so-called "bolus paste," composed of two parts terra alba and one part linseed-oil or glycerin. It can be quickly and easily spread upon the skin in a thin layer, where it soon forms a dry, closely adherent, and protective coating. Various substances may be added to this paste for the purpose of modifying its action, care being taken to first mix the white earth with the oil or glycerin before adding the other ingredients. The following formulæ are recommended, especially for eczema: Terra alba, five parts; ol. lini, three parts; liq. plumbi subacetatis, two parts. M. Or terra alba and ol. lini, each thirty parts; oxide of zinc and liq. plumbi subacetatis, each twenty parts. M. If instead of the terra alba the red Armenian bole is used, the color of the paste will approach that of the skin, which in some cases is an advantage. The bolus paste is recommended for all forms of eczema and for erythema, and as an excipient for strong oxidizing, reducing, or cauterizing agents.

Lead-pastes are prepared by boiling together fifty grammes of finely powdered litharge and eighty grammes of vinegar to form a mass of a pasty consistence, to which are then added ten grammes of linseed-oil or glycerin. The preparation is improved by boiling it a second or third time. It is said to be very useful in all sorts of eczemas. If the oil or glycerin is omitted, the paste has a remarkable drying effect upon the skin.

"*Kleister-Pasten*," or adhesive pastes, are composed of three parts rice-starch, two parts glycerin, and fifteen parts distilled water, the whole boiled down to fifteen parts. This paste is used as an excipient and will take up one half its weight of solid substances, and more than that if more glycerin is added. The drug to be used is mixed with the ingredients of the paste and all are boiled together. For eczema the writer recommends: R Zinc oxid., 50·0; ac. salicyl., 2·0; amyl. oryzae, 15·0; glycerin, 15·0; aq. destil., 75·0. M. Boil to 140·0. For acne the following formula is given: R Sulph. præcip., 40·0; calc. carbon. præcip., 2·0; zinc oxid., 20·0; amyl. oryzae, 15·0; glycerin, 20·0; aq. destil., 75·0. M. Boil down to 120.

Dextrin-pastes are made by mixing equal parts of dextrin, glycerin, and water, and boiling them together for a few minutes. If to this a powder is to be added, about one half more glycerin must be used. Thus, for eczema the following formula is given: R Zinc oxid., 40·0; dextrin, 20·0; aq. destil., 20·0; glycerin, 40·0; flor. sulph., 2·0. M. Sig. Boil together to make a paste. Another formula for eczema is a mixture of the lead and dextrin pastes made by boiling litharg., 30·0, and vinegar, 50·0, together to make 50·0, and then adding 15·0 each of dextrin, water, and glycerin, previously boiled together, and boiling the whole till a paste is formed. If a fluid substance is to be added to the dextrin paste, such as the liq. plumb. subacetat., no water need be used.

"*Gummy-Pasten*," or mucilaginous pastes, are made with gum arabic as the adhesive principle. A cheap and harmless one, that sets quickly, is made by mixing one part each of mucilage of gum arabic and glycerin with two parts of an indifferent powder, such as starch. To it may be added various medicaments, it being specially useful as an excipient for chrysarobin or pyrogallic acid. If the powder is omitted, the other ingredients form a quickly drying liniment, well adapted for the use of carbolic acid, etc., in pruriginous diseases. This preparation, it is said, does not allow of so extended use as other forms, for all acids that tend to injure the adhesive quality of the gum spoil the paste.

According to Unna's experience, lead should only be used in the "lead paste" in the form of the acetate, or in a mixture with "dextrin paste." Zinc oxide could be used in all of the preparations. Sulphur was not well tolerated by the bolus paste, and not at all by the lead paste. Ichthyol combined well with all except the gummy pastes; tar with the starch, dextrin, and gummy preparations; and naphthol, carbolic acid, chloral, and camphor with all; and the same was true of salicylic acid, except that with the gummy paste it could be used only in the reduced strength. Iodine and iodoform combined with all excepting the starch and dextrin pastes. Corrosive sublimate, calomel, and the red and white precipitates went well with all, while chrysarobin and pyrogallic acid were best combined with the bolus and gummy pastes. Animal, vegetable, and mineral fats and soaps, though they could be used with all in small quantities, yet, when added in large proportion, were, with most of the pastes, incompatible.

Resorcin in Diseases of the Skin.—Dr. J. Andeer, one of the first to advocate the use of resorcin, writes enthusiastically concerning its beneficial effects in diseases of the skin (*Ibid*). The action of the drug was best exhibited in diseases affecting

the epidermis of the skin, or the epithelium of the mucous membrane. Used topically upon the sound skin, it produced absolutely no unpleasant effect, neither abnormal stiffness, discoloration, roughness, nor scaling. Though it is not absorbed by the normal skin, absorption takes place quite readily, it is said, when the skin is in a pathological condition. The method of using the resorcin was by innunction, a five- to eighty-per-cent. ointment being used, made with vaseline. The results reported by Andeer are most extraordinary. Among the diseases asserted to have been cured by it are scarlatina, rubella, measles, variola, vaccinia, eczema, fissures at mucous orifices, frost-bite, syphilis, anthrax, and even leprosy. In scarlet fever the writer used a twenty-per-cent. resorcin-vaseline, which was smeared over the whole body and covered with cotton batting. At the end of twenty-four hours all the unpleasant sensations of the patient had disappeared, and the temperature had become nearly normal. Like prompt results were obtained in a very severe case of measles by the use of baths combined with innunctions of twenty- to eighty-per-cent. resorcin-vaseline. A fifty-per-cent. vaseline effected a cure in a small-pox case in two days, the patient feeling entirely well in a week, without resulting scars. But a leprosy case was the most extraordinary of all. The patient, a woman, who had been leprosy for a long time, with thickening of the skin, tuberculous formations, ulceration, etc., was rubbed every second day, each time in a fresh spot, with the most concentrated resorcin-vaseline, and in four weeks all her distressing symptoms had disappeared. More acquaintance with this most remarkable remedy is much to be desired.

The Extirpation of Small Round Tumors of the Skin with a Quickly-rotating Punch.—Instead of using an ordinary knife for the removal of little tumors of the skin, Dr. F. Busch ("Berl. klin. Wochenschr.," xxi, 1884) advocates the use of a steel punch which is made to rotate rapidly either by attaching it to the dentist's drilling engine, or, more conveniently, by fastening it to Fleureuloup's artificial leech. For different-sized tumors different-sized punches must be used, but, as this method is best adapted to small tumors of one centimetre diameter or less, the size of the punch need never be large. The instrument having first been adjusted according to the depth to which it is desired to cut, the punch is placed over the tumor, a spring is liberated, and in an instant the excision is made. A clean circular wound is left, which should be dressed in the usual manner for open wounds, and be allowed to heal from the bottom. When operating upon loose tissue, such as the eyelid, the requisite resistance is obtained by putting the part on the stretch—in the case of the eyelid, by inserting a piece of wood or horn under it. The lip should be supported by the finger. The advantages stated for this method are the simplicity of the operation and the avoidance of anesthetics.

The Elements of Diagnosis in Late Hereditary Syphilis.—Dr. Fournier ("Ann. de dermat. et de syph.," 1884, Nos. 3, 4, and 5) summarizes the various symptoms by which in an obscure case we may arrive at a diagnosis of late hereditary syphilis. The more essential factors upon which such a diagnosis will depend are stated as follows:

1. *Constitution*—a factor, however, which is not regarded as especially important. The subjects of hereditary syphilis are usually delicate, thin, muscularly weak, with a pallid or rather grayish and almost earthy complexion. The latter is often confounded with the complexion of struma, but in syphilis the fine, pale, transparent skin, the massive hypertrophy of the upper lip, the lividity of the extremities, the goose-flesh of the extensor surface of the limbs, and the chronic acne that characterize the scrofulous patient, are wanting.

2. *Arrest of Development*.—Syphilitic children develop slowly, walk and speak late, are retarded in their growth, do not attain

the average height, are undersized and mal-developed in all proportions. This slowness and incompleteness of growth affect the testicle, the hair of the beard, pubes, etc., and in women the establishment of menstruation is retarded and the breasts develop poorly.

3. *Deformities of the Skull and Nose.*—The deformities of the skull most commonly affect the frontal bone, and present three varieties: 1. The bone projects prominently *en masse*, being higher and longer than usual and more curved forward. In some cases, instead of forming a gentle curve from the eyebrows to the hair, it rises vertically or projects forward so as to form an obtuse angle with the root of the nose. 2. A more frequent deformity is the production of lateral bosses, which are rounded and almost invariably bilateral and regularly symmetrical. 3. A very much rarer variety of the deformity is a vertical boss in the middle line of the bone, generally two to three centimetres long, apparently flattened at the sides, and projecting in front like a chicken-breast. The deformities of the other parts of the head are described as of four kinds: 1. Small, flattened, nipple-like elevations of the bone, circular in shape and convex. They are of bony hardness, the skin over them is unaffected, and their size varies up to that of a twenty-five-cent piece. They are usually lateral and symmetrical. 2. Transverse enlargement of the skull, caused by lateral prominence of the parietal bones. Sometimes there is a depression over the sagittal suture, while the skull is prominent at the sides. 3. Asymmetrical skull. 4. Hydrocephalic skull, which often is very slight.

The *deformities of the nose* are of two varieties: 1. The nose is enlarged and disfigured, presenting a caved-in appearance, or otherwise misshapen and grotesque. This deformity is due to destruction of the septum, occurring in childhood or adolescence, and is attended with a history of *ozæna*, discharge of detritus, etc. 2. More commonly the deformity is slight and hardly appreciable, producing rather a badly formed nose than a decidedly deformed one. Most usually just below the frontal spine the bridge of the nose is depressed and flattened, and its base is widened. In other cases, but more rarely, the deformity affects the inferior segment of the nose, giving rise to inequality of the surface and slight depression at the sides. This condition dates from birth, and may be intra-uterine.

4. *Deformities of the Bones of the Trunk and Limbs.*—These are of two varieties, viz.: First, circumscribed lesions, consisting in tumefactions and osseous swellings, producing modifications both of structure and shape. This variety is seen most frequently in the long bones, affecting either the shaft or extremities, as, for example, in dactylitis. The tibia is the most characteristically affected bone, sometimes showing thickening and enlargement for one third its entire length. Sometimes its surface is uneven, irregular, and covered with nodes; sometimes the crest becomes broadened and flattened, so as to form a plane surface rather than a crest; sometimes it shows a marked incurvation on its anterior ridge, which is not due to curvature of the bone but to a partial hyperostosis. In a second class of cases a general enlargement of the bones is met with, sometimes affecting only one bone, sometimes a whole system, such as the bones of the spine. Besides this we find incurvations of the bones of the extremities, deformities of the thorax, and spinal rickets. While syphilis is not a direct cause of rickets, it gives rise to it through the general enfeeblement of the constitution, which is superinduced by the disease.

5. *Cicatrices of Skin and Mucous Membrane.*—While many of these are of indefinite diagnostic value, they often possess certain characters affording presumptive evidence of syphilis. These characters are, first, large extent of the scars, especially when they appear in considerable number. A second and more important character is configuration. The scars are rounded, have

their borders made up of many segments of circles, or they are serpiginous in form. A single semicircular scar is very characteristic. A third character relates to the seat of the cicatrices. They are found at the angle of mouth, on the nose, preferably on the ala and below the septum, on the lower part of the back and buttocks, and the posterior crural region, where they are very faintly marked and have to be carefully sought, and finally on the palate and pharynx.

6. *The Lesions of the Eye.*—In the first place, there is apt to be a history of antecedent ocular inflammation which was very severe and affected both eyes successively. This antecedent inflammation leaves its traces in impaired transparency of the cornea in the form of leucomas; in lesions of the iris in the form of synechia, with irregularity in dilatation of the pupil; or of deposits of false membrane in the pupillary space. More rarely we find atrophic spots in the choroid, papillary atrophy, and very rarely zonular cataract. Of especial frequency are diffuse interstitial keratitis and iritis.

7. *Lesions of the Ear.*—There is antecedent purulent discharge attended with the various results of suppurative disease of the middle ear. As evidences of the previous disease we have alterations of the tympanum, such as perforations, cicatrices, partial or complete destruction of the membrane; in some cases complete or partial deafness of one or both ears without apparent lesion. The deafness may be recognized as syphilitic when produced without local or general symptoms of otitis vulgaris; when it comes suddenly, progresses rapidly, and becomes confirmed in an extraordinarily short time; when it is very marked and is permanent; when it occurs without appreciable lesion.

8. *Dental Deformities.*—For these the writer refers to a previous article in Nos. 9 and 10 of the "*Annales de dermatologie et de syphilis*," 1883.

9. *Lesions of the Testicles.*—In the first few weeks, months, or years of life, according to Fournier, the testicles may present the same lesions as in acquired syphilis of adults, in the form either of inflammation of the tunica albuginea or of sarcocele. The disease runs the same course as in adults. If treated, it may be healed; if not, atrophy sets in. It is generally double and symmetrical. It is so apt to be overlooked in children that it is commonly left untreated, and, consequently, the testicles atrophy, so that, in advanced age, we often find the latter very small, of a peculiar hardness, irregular in shape, nodular, and without antecedent history of disease. This condition constitutes a valuable sign of hereditary syphilis. In a much smaller proportion of cases there will be found in advanced years a relative atrophy or impaired development, in which the testicles are notably small, but not deformed, and without morbid induration. They are like a child's testicles, and are not the result of pathological processes, but due simply to an arrest of development.

It is further observed that subjects of hereditary syphilis are often affected with ganglionic hypertrophies more or less marked, which are generally most noticeable in the lateral regions of the neck—sometimes in the inguinal region, in the axilla, or in the abdominal cavity. They are of long duration, and are hard to the touch. Very often these glands are regarded as strumous in character. Chronic hydrarthrosis, especially affecting the knees, and deforming arthropathies, are also sometimes met with. Moreover, the disease may cause an arrest of intellectual development, and sometimes complete idiocy. The mental impairment may be associated with motor derangements, attended with more or less uncertainty or clumsiness of movement. Finally, in other cases that are obscure, the family history, especially a record of many miscarriages and the early death of several children of the family, will assist in guiding us to a correct diagnosis.

The Abortive Treatment of Soft Chancre.—Such is the promising title of a paper by Hans von Hebra ("Wien. med. Presse," xiv, 1884), in which are reported ten cases of non-infecting chancre successfully treated by local applications of salicylic acid; though, so far as they go, the results are excellent, the number of cases is far too small to warrant general conclusions. The method consisted in applying pure salicylic acid directly to the ulcer, care being taken not to allow it to touch sound parts, after carefully washing the affected member with warm water. The acid is covered over with a piece of lint, and a strip of adhesive plaster is placed over all. We are cautioned to wash off any remains of previous applications—as of lead, zinc, or mercury—with soap and water, since salicylic acid is liable to combine with these substances and prove more caustic than we wish. If the ulcer is of a mild type, the dressing need be renewed but once in twenty-four hours; but, if there is a good deal of secretion, it should be changed twice a day. During the first day the ulcer covers itself with a white scab, while the surrounding parts become red. After the third day, by which time the scab attains a considerable size, the use of the acid must be stopped. The subsequent treatment consisted in the use of some emollient ointment, under which the scab became detached in half a day, leaving a healthy raw surface, which healed in from two to three days. The writer states that by this method the sore heals in as many days as it takes weeks to heal it by other methods. The treatment is said to be almost painless, and is also very cleanly. In none of his ten cases were there any buboes. [It may be mentioned that this same method of treatment was in use in this city five or six years ago.]

A New Preparation of Mercury.—A new mercurial preparation, to which the name *hydrargyrum tauricum oxydulatum* has been given, is described by its sponsor, Dr. G. Lustgarter ("Wien. med. Wochensh.," 1884, Nos. 11 to 14), as a dark, yellowish-green, odorless and tasteless powder, which does not change by keeping, and is easily assimilated when administered by the mouth. The dose is one tenth of a gramme, and is given with milk-sugar in capsules, one half to one hour after meals. The iodide of potassium, it is stated, can not be safely used at the same time, on account of the danger of too large an amount of the iodide of mercury being formed. It is asserted of this preparation that it is not liable to cause stomatitis or salivation, nor to give rise to any trouble in the digestive tract. Its action in syphilis, in the few cases in which it was tried, is described as favorable.

Miscellany.

THERAPEUTICAL NOTES.

Hydrastis Canadensis in Gynecological Practice.—Dr. Edgar Kurz, of Florence, contributes a short article to Betz's "Memorialien," in which he summarizes Schatz's statements in regard to the effects of the drug, and briefly recounts his own experience with it, having employed the fluid extract made by Messrs. Parke, Davis & Co. The first case was one of profuse menstruation in a girl fifteen years old, in whom menstruation had been established six months before. Twenty drops were given three times a day, beginning fourteen days before the period. The first flow was perceptibly moderated, and the continued use of the remedy for a few months rendered the performance of the function perfectly normal. The second case was one of slight metritis and oöphoritis. The flow always occurred several days too soon, and lasted fifteen days, so that the patient was very much weakened. The use of hydrastis was followed by a restoration of the flow to the proper character.

but the other features of the case were unaffected. The third case was one of a large interstitial fibrous tumor with hemorrhages at irregular intervals. After several weeks' daily use of hydrastis the flow returned only once in three weeks, and, after a few months' continuance of the remedy, only every four weeks, and the quantity of blood lost became normal. No diminution in the size of the tumor was observed. The fourth case was one of defective involution of the uterus after an abortion, with a profuse flow every three weeks. The use of hydrastis was begun eight days after the subsidence of a flow, and the next menstruation occurred at the proper time, and the loss of blood was diminished. The medication having been discontinued, the next flow came in three weeks, but a resumption of the use of the hydrastis caused the patient to become regular again. The fifth case was one of chronic oöphoritis, with moderate losses of blood occurring quite irregularly—every eight to fourteen days. The use of hydrastis caused the flow to appear regularly every three weeks. The sixth case was one of prolapse and retroflexion of the uterus, the organ being soft and easily brought into a state of ante flexion. Menstruation was profuse and anticipating, and the patient had hystero-epilepsy. The use of fifteen drops of the fluid extract of hydrastis three times a day was begun fourteen days before an expected period. The flow soon became regular and less profuse, but each menstruation was still accompanied by a hystero-epileptic attack until a Hodge's pessary was inserted. The seventh case was one of chronic metritis and endometritis, with profuse menstruation lasting ten days. A prolonged use of hydrastis reduced the duration of the flow to four days, and at the same time the leucorrhœa was decidedly diminished.

Osmic Acid in the Treatment of Epilepsy.—Wildermuth ("Berliner klin. Wochenschrift;" "Centralbl. f. klin. Med.") has experimented for the past two years with osmic acid as a remedy for epilepsy, using pills of osmate of potassium, each containing one one thousandth of a gramme of the salt. The largest amount given in a day was fifteen one thousandths of a gramme. The trials were begun upon ten confirmed epileptics. Seven showed no result; in two the attacks became less frequent; and in one, whose case was apparently quite desperate, a most astonishing change took place, consisting of a prompt diminution in the frequency and severity of the attacks, and their final disappearance, together with an improvement in the mental condition. Of three patients with whom the osmic-acid treatment had only recently been begun, two showed perceptible improvement, and in the third no effect was noticed. In none of the cases were any evil effects observed.

Naphthalin in Diarrhœal Affections.—At the third German *Kongress für innere Medizin* ("Centralbl. f. klin. Med.") Dr. Rossbach called attention to the fact that large doses of naphthalin might be given without producing poisonous effects, inasmuch as nearly the whole of it passed through the intestinal canal unchanged, although in some cases a small amount of it, either in its own form or changed into naphthol, was to be recognized in the urine. The latter fact, he said, made the remedy of value in preventing putrefaction of the urine. He had found the drug of service in almost all forms of diarrhœal disease, provided it did not depend on some incurable affection like carcinoma. In the vomiting and purging of children, however, it did not seem to be of any avail. Patients soon became accustomed to the smell of the medicine, and there were only a few whose digestive organs would not tolerate it.

The Rearing of Hand-fed Infants.—In a lecture on this subject, at the London International Health Exhibition, an abstract of which we find in the "Lancet," Mr. Edmund Owen remarked that probably almost every one would agree to the general proposition that for the first half year of infant life the mother's milk should be the only food; but where a poor woman had to leave her infant in order to earn money for the support of her husband, or where the lady of fashion found that the claims of society were so strong as to efface the sweet duties of motherhood, the question had to be answered as to the best artificial food. The physiological chemist brought in his answer: having made an analysis of human milk, he prepared a patent food which, he thought, ought to be even superior to the original article; but his compound was never absolutely fresh, and, when reared on it, infants were too apt to grow weak and flabby; most likely it contained some starchy element which

found no representative in human milk; he might almost as well put in fine sawdust.

The lecturer was apprehensive lest preserved milk should entirely usurp the place of fresh milk in the nursery. At present it was far too widely employed, and he entirely failed to see how it could form a more wholesome diet for infants—as some maintained it did—than the fresh article. He could no more believe this than that the adult would thrive better on canned American meat than on fresh sirloin. For babies, cow's milk, which should be always fresh, should be mixed with an equal or even greater bulk of warm water, in which a lump of white sugar and a pinch of salt had been dissolved; the fresh milk was an excellent antiscorbutic, and was therefore always needed. Often, when he had been assured that cow's milk could not be retained by the infant stomach, he had been able to demonstrate to the contrary by mixing even as much as double the quantity of water with it. In summer lime-water might be added to the mixture.

As regarded feeding-bottles, Mr. Owen said that the old-fashioned long, straight one, with the short India-rubber nipple, and with no tube at all, was the best; and he wished that, in their search for the antique, mothers would revert to the use of the ancient feeder. With this the infant could be fed only when the nurse had the bottle in her hand, so that the child's meals would be given at regular intervals for a definite time, and under close watching. The very worst kind of feeder was that now in general use; he had heard it called, by one well competent to form an opinion on the matter, "the lazy nurse's bottle." It was not so easily kept clean as the slipper-bottle, and was liable to many and serious abuses. Infants should be fed at regular intervals, and, if they vomited after their milk, they should be fed on smaller quantities, given at shorter intervals. As a rule, for the first month the bottle should be given every two hours, gradually increasing the interval to three and eventually to four hours. As time went on, less and less water should be added to the milk. Too often infants were fed simply because they cried. True, the infant had "no language but a cry," but the cry might mean that the stomach was already overloaded. Before the end of the first year infants should be entirely weaned from the bottle; they should then have daily a little undercooked meat pounded into a pulp, to which some gravy and salt had been added. Potato finely mashed and covered with gravy, an egg, or a little milk pudding, might vary the diet. But on no account should they be allowed any wine, beer, tea, or coffee, though they might have cocoa and milk. The meals should be given regularly; children should not be allowed to "pick" at bread-and-butter, cakes, and sweetmeats in the intervals.

Having criticised unfavorably the absurd fashion of bunching all the little child's clothes around the middle of its body, the lecturer pleaded that here, at any rate, there was great need for a "scheme of redistribution." The body should be evenly covered. Children could not be hardened by cold baths or by any other exposure to cold; only the very fit could survive such severe treatment. Like flowers and fruit, they loved warmth and sunlight; and when he had a sick child under observation he made it one of his first cares to have the cot placed in a sunny part of the room. In England people did not seem to know the value of sunlight; the Italians did, however, and their common saying was to the effect that "where the sun does not go the doctor does." The sun's rays had a destructive influence on suspicious or baneful gases; but to such vapors children should never be exposed. No bath, sink, or closet should be allowed near the nursery; many children fell victims to a neglect of this first law of domestic sanitation. Everything about them should be sweet and fresh, and there should be no carpets nor bed- or window-hangings to interfere with the free circulation of the air. On no account should the infant be taken to sleep in its mother's bed. If the weather was very cold, a warm brick or bottle wrapped in flannel might be tucked in under the clothes of the cot. For insuring appetite, digestion, and sleep, the infant should be taken out of doors each day when the weather was fine, and every day, unless a bitter wind was blowing, or it was foggy, the window should be thrown open for a while, as fresh air in the house was an absolute necessity. A well-managed babe should close its eyes as certainly as a mechanical wax doll as soon as it was laid down for sleep. The small hours of the night and the unhappy husband need never be disturbed by cradle-songs and lullabys. It was only a home-sick sugar-planter who cried, "Rock me to sleep,

mother!" and probably if an infant could speak it would never be heard repeating the request.

The Uncertainties of Therapeutics.—In the course of an address delivered at the opening of the section of medicine, at the recent meeting of the British Medical Association ("British Medical Journal"), Dr. James W. T. Smith, of Belfast, spoke as follows:

Our knowledge of therapeutics has not advanced in equal proportion with other branches of medical science. It is the department in which we know least. The modes of action of many medicines are a labyrinth to which we have no clew. To investigate their actions and to obtain a knowledge of their influence on disease are matters of great difficulty. The action of many is imperfectly known, and it may differ much in individuals. It is very difficult to estimate correctly what influence a medicine has really had in producing the changes which have occurred after its administration, for we know that many diseases will get well if left to themselves. Repeated trials and careful observation can alone determine this.

Perhaps there is no point on which members of our profession so frequently deceive themselves as on that of the effect of new medicines, and it must be admitted that many of the communications which appear in our journals upon this subject will not bear the test of experience. Such statements should be received with great hesitation, except when they come from those who, by careful physiological experiment, are entitled to speak on the subject. Another hindrance to progress is this—that, when a medicine has been ascertained to have a decided effect in a particular class of affections, there is a tendency to urge its employment and vaunt its usefulness in diseases over which it has no influence whatever; of this tendency the bromide of potassium is a good instance, that excellent but ill-used drug having been recommended in nearly half the ills which flesh is heir to.

New suggestions of treatment, and the wonderful effects of new medicines, put forth without substantial test, excite only distrust and disappointment in those who act on them, and add to the number of those who are already skeptical about the use of any medicine.

A disbelief in the efficacy of all drugs is, however, as unreasonable as an unlimited faith in their powers. We possess several which have been proved to have a definite action on which we can rely, and their number is being slowly added to. The discovery of salicylic acid has changed the whole treatment of rheumatism, and is a strong incentive to further therapeutic investigation.

After all, the practice of medicine is ultimately the practical application of therapeutic agents, and it is in the careful study of these that some of the greatest victories are to be gained by the coming race. But our progress must necessarily be slow, and we must take care lest the structures we build on our way prove only to be sand-castles.

The late Mr. Cæsar Hawkins.—Like the majority of those who have attained high rank in the profession of medicine, Mr. Hawkins was a man of character as well as ability. One who knew him for nearly fifty years writes of him: "During all these years he was ever the same—most industrious and painstaking in all matters relating to his work, high-minded and honorable in all that was connected with the interests of his profession, kind and liberal to a degree, that truly it may be said his right hand knew not what his left gave away. All who had the privilege of his friendship will indorse this estimate of his character. He was one of the most accurate and clear-headed of men that I had ever anything to do with; no lover of ostentation, no seeker after personal advancement by show or talk, but true in every sense of the word, and a thorough high-minded gentleman."—*Medical Times and Gazette*.

Murdock's Liquid Food.—"This American preparation," says the "Lancet," "is described as 'an extract of beef, mutton, and fruits, containing corpuscles and 12½ per cent. of soluble albumin.' The solution gives the blood-spectrum very strongly, and contains so much albumin as to become almost solid with dilute nitric acid. Of course, it is an exceedingly powerful and easily digestible form of food. It is calculated to be of the utmost use in medical practice; and, although the flavor is not very pleasant, it is not absolutely disagreeable, and may, no doubt, be modified by salt and spices. Among other applications, the use of the liquid food as an enema will strike every one."

Lectures and Addresses.

A CLINICAL LECTURE IN GYNÆCOLOGY,

DELIVERED AT BELLEVUE HOSPITAL.

By WILLIAM M. POLK, M. D.,

PROFESSOR OF OBSTETRICS AND DISEASES OF WOMEN AND CHILDREN IN THE
MEDICAL DEPARTMENT OF THE UNIVERSITY OF THE CITY OF NEW YORK.

*Vaginal Cystotomy in a Case of Paralysis of the Bladder, with
Remarks on Catheterization of the Ureters.*

This case, gentlemen, is that of a woman, about twenty-eight years old, who a year ago fell from a third-story window, sustaining injuries to the spine which resulted in paraplegia. She was admitted to the hospital two months ago. As is usual in such cases, there was paralysis of the bladder and rectum. An additional feature of interest is the fact that menstruation was also suspended. The paralysis of the limbs has now been cured four months, and the rectum, though performing its functions somewhat sluggishly, has greatly improved. The paralysis of the bladder and the suppression of menstruation continue.

First, as to the bladder. There is a constant dribbling of urine, with all the annoyances arising from it, such as the discomfort of the wet state, the excoriation resulting from the action of the urine, and the ever-present offensive odor. In addition, there is constant pain in the region of the base of the bladder. The urine is loaded with pus and mucus, contains myriads of vibrios, and is highly alkaline.

Passing the finger into the vagina, we find the uterus and ovaries normal, but between the anterior vaginal wall and the symphysis there is a rounded, sensitive tumor, in size about equal to an egg. Passing the catheter through the urethra, we find this tumor to be the bladder, and, as you see from the absence of any flow of urine, the empty bladder.

With the instrument in the organ and my finger in the vagina, I can carefully explore its base and sides, and, by placing the hand thus above the pubes, I submit its upper parts to the same process. By this means I prove that there is no tumor or foreign body in the bladder, and that the mass between the anterior vaginal wall and the symphysis is nothing more than the organ itself, made prominent by its greatly thickened walls. Extensive hypertrophy of the walls of the bladder has been the result of the spinal injury.

Let me say here that, in making a vaginal examination, if a normal bladder is empty, you will find no prominence between the anterior vaginal wall and the symphysis pubis; the two surfaces can be brought into close relation, and the wall moved freely in all directions over the face of the bone.

Going back a little, we know from analogy that what has taken place in the bladder and its connections is the following:

The injury inflicted upon the cord by the fall expended itself mainly upon the lumbar enlargement, arresting for a time not only all action originating there, but all that

might have been sent from the upper portions of the cord and the brain. Gradually this lesion has been repaired for all the centers save those presiding over the bladder reflex and the function of menstruation. Paralysis of the bladder was not accompanied by paralysis of the urethra, for, as you see, this canal is tightly closed. Soon after the injury there was prolonged retention of urine, requiring the use of the catheter; after the patient left the hospital this gave place to dribbling of urine, for, as she had no means of relieving herself, the urine accumulated, distending the bladder, and finally forcing itself by mere weight through the resisting urethra.

As you may imagine, the vesical walls began to suffer from this constant distension; but, granting that they might not resent it, they surely would find it difficult to submit to the irritant action of the now decomposed urine. As a matter of fact, the combined influence of the over-distension and the irritation is shown in the hypertrophic thickening of the muscular and mucous walls of the bladder. Not only have the walls been thickened, but the capacity of the organ is much diminished. Whereas at first a quart of urine or more would be retained before dribbling set in, now four ounces represent its capacity. Does the mischief stop in the bladder? We know to the contrary; the resistance of the urethra extends beyond the bladder. If it is sufficient to cause the amount of hypertrophy and thickening witnessed here, it is sufficient to dam back urine through the ureters to the pelves of the kidneys, and set up double pyelitis with all its attendant dangers. The histories of these cases prove that such is the termination of this condition of the bladder, and, though our patient does not as yet give active evidences of implication of the pelves of the kidneys, that occurrence is a mere question of time.

Naturally we ask ourselves if this evil can not be averted. If this patient were under constant supervision, so that the urine could be drawn every two hours and the bladder washed out twice a day and fully distended, a great deal could be accomplished; but even this would not meet the difficulty so well as another procedure—viz., *opening the base of the bladder*. Make such an opening, and you relieve the bladder from its embarrassment. The urine flows off as fast as it is received from the ureters; the bladder, relieved of pressure and the decomposed urine, will grow no worse, but improve. And more than all—the pressure being taken from the ureters and pelves of the kidneys, the urine flowing off through the ureters as fast as it is formed, and decomposition and its results to the pelves being avoided—not only are the pressing dangers relieved, but we put the patient in the best position to escape those that lie directly in her way.

The cure that has taken place in the lower extremities—for the patient has entire restoration of their motor and sensory functions—and the great improvement she recognizes as having occurred in the rectum justify us in believing that in time improvement may occur in the action of the bladder; but, if she were to be left as heretofore, there is reason to believe that long before such improvement came the state of the kidneys would make it serve a short career

of usefulness. The same general treatment employed since her admission will be continued—tonics, galvanism, and faradization from the region of the bladder to the lower part of the cord, coupled with the occasional use of the actual cautery over the lower dorsal and upper lumbar regions.

While the patient is being anesthetized I will occupy you with some suggestions touching the second morbid condition—the suppressed menstrual function. Until the injury, this function had never suffered arrest; from that time till now it has been suspended. What is the cause? Unquestionably the injury to the spine, and the injury must have been low down, so as to sever the connection between the lumbar enlargement and the internal genitals, for we know that even after division of the cord in the dorsal region, *above the lumbar enlargement*, the processes of ovulation, of development of the pregnant uterus and the lacteal glands, and of parturition, may go on. If we may be allowed a conjecture, we will say that the lesion which has affected the centers presiding over the action of the bladder has likewise interfered with those presiding over the function of menstruation, and perhaps ovulation. It would be a most interesting study, that of the condition of this woman's ovaries. Is the development of the ova interfered with? Could we determine it in conjunction with a careful study of the cord, much light might be thrown upon the vexed question as to the independence of ovulation and menstruation. The two processes are so intimately associated, however, that it is probable any lesion of the cord affecting one would most likely affect both. But, whether ovulation is involved or not, menstruation assuredly is, for never since the injury has she given symptom or sign of such an occurrence. And just here let me again call your attention to the fact that we have no other cause of this cessation present. Supposing ovulation to continue, the question of pregnancy in this case must still be answered in the negative, for, in the absence of every evidence of uterine activity, even at the periods at which menstruation would fall due, we must conclude that here, at all events, the trophic changes in the uterus are so seriously impaired as to make the formation of a decidual membrane impossible. Without such a membrane the implantation and development of an ovum are highly improbable.

But the patient is now ready for the operation, so, with your permission, we will cease commenting upon these interesting but obscure topics and turn our attention to a matter of more immediate and practical importance to her and us. The point at which to make the opening is in the median line, half an inch above the vesical end of the urethra. We must bear in mind the relation of the ureters to this line, else injury may be done there openings. The injury itself would hardly cause much inconvenience, but subsequent contraction at the seat of injury might end in constriction or even closure of the tube—a matter of great moment. These openings are situated from half to three quarters of an inch from the anterior median line of the vagina, one on either side, and are about an inch and a half from the vesical end of the urethra. Our opening will, then, be so placed as to avoid injuring not only the ureters but the

vesical end of the urethra as well—a matter of less importance than lesion of the kidney outlets, but one bearing strongly upon the action of the urethra as an outlet—a question that may come up should the paralysis of the bladder be cured. The position of our patient is that upon the back with the thighs well flexed on the abdomen.

This blunt wire curette, having a large loop, will admirably serve our purpose as a guide. Introducing it into the bladder, I place the loop at the point selected for incision and press the vesical and vaginal walls down and out on a line with the ostium vaginae. You can easily feel the loop as I thrust this knife through the walls directly into it. Taking next this probe-pointed bistoury, I enlarge the opening toward the uterus so as easily to admit my index-finger. Owing to the condition of the walls, the bleeding is somewhat more than is usual with these cases, but even here it requires no special effort at arrest.

Carrying my finger well over the vesical wall, I appreciate the condition of the diseased mucous membrane. As intimated in the earlier remarks, it is thick, and thrown into folds; and off to the patient's right is a distinct pocket in the wall, free, however, of anything like stone formation.

As it is a matter of some importance to determine the condition of the pelves of the kidneys, and as the urine in the bladder is so infected with the products of vesical inflammation as to furnish us with no satisfactory evidence upon this point, I will collect some directly from the ureters by catheterizing them, and, at our next meeting, will give you the result of the inquiry.

We next wash out the interior of the bladder with a warm, saturated solution of borax, introduce this glass button, having a hole through it, into the opening, and return the patient to the ward. Should we leave the opening without the button, it would speedily close. To insure a permanent opening and give free drainage to the bladder, we must keep this perforated button in place for several weeks—perhaps as long as the paralysis lasts.

Our confident expectation is that this patient will improve greatly. Certainly she will be relieved from the drain and tension incident to a chronic cystitis, and possibly pyelitis, to say nothing of the relief given the kidneys by the free escape of the fresh urine.

We will keep the vagina clean, and for the present tend the bladder once a day with a warm solution of bichloride of mercury, 1 to 2,000, and chloride of sodium.

Before closing, permit me, gentlemen, to say a few words upon catheterization of the ureter. You have seen me do it upon this patient, after making the opening into the bladder, using a No. 5 instrument. Can it be done without such an opening? Yes. Simon did it by forcing the finger through the urethra, passing the catheter alongside and guiding its point with the finger-tip into the canal. The great objection to this procedure is that it usually results in permanent incontinence of urine—a very serious mishap.

Pawlick maintains that it can be done by following with the point of the catheter—the instrument being introduced through the urethra—certain lines on the anterior vaginal wall which indicate the course of the ureters as they enter

the bladder. He states that these lines can be made evident in all cases by carrying out the following directions:

The bladder must be empty, the abdomen free, the woman to be put in the knee-chest posture, and the perineum raised so as to distend the vagina with air. The lines are then seen starting from about the points at which we know the ureteric orifices to be situated, and running upward and outward, the course of each corresponding to that of the ureter.

There is no doubt that in cases of relaxed and distended vaginae these lines can be brought out, but in such as present contrary conditions you will as often fail to find them.

But, granting that they may be recognized in all cases, the great defect in the method is the difficulty attending the determination of the question as to the actual entrance into the ureter. The depth to which you may carry the instrument is but a poor guide. Many bladders are so elastic as to be carried before it, even so far as the synchronoses. Given a case in which catheterization of the ureter is demanded as a means of diagnosis—and every renal tumor requiring extirpation is such a case—Pawlick's method is too uncertain. Should the patient be a woman, open the base of the bladder, pass your catheter through the urethra, and, by means of your finger passed through the artificial opening, you can always insert the instrument into the canals. You collect urine first from one kidney, then from the other, and are in the only sure position to determine the state of the two organs. Should both be diseased, you spare your patient a fatal operation. Should one be sound, by operating you prolong life.

Original Communications.

DRYNESS AND ELEVATION

THE MOST IMPORTANT ELEMENTS IN THE

CLIMATIC TREATMENT OF PHTHISIS.*

By CHARLES DENISON, M.D.,

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DRYNESS.

Synopsis: 1. Variability *versus* equability. 2. A rule for classifying climates as to dryness and desirability, based upon low, absolute, and relative humidities and preponderance of sunshine. 3. The influence of elevation, sunshine, cold, etc., in producing desirable dryness. 4. The physical effect of dryness on man.

The importance of the discussion of dryness is based upon the proposition: An actually small amount of atmospheric moisture is the most important element in the best climates for phthisis. Any proof of the correctness of this assertion will be deferred until after the consideration of the subject of dryness in its various phases as a climatic attribute. The statement, however, is thus prominently brought to the front because it is decidedly at variance with the past theories and beliefs of the great body of the medi-

cal profession. It is, therefore, to our advantage to start squarely and fairly by marshaling the forces that are thereby brought into controversy, for, as I shall show, the statement puts variability over against equability, and the latter has heretofore been the darling idea of the medical adviser—the delusive hope of the unfortunate consumptive.

It is to be regretted that the *preponderance-of-opinion* method of settling scientific questions in controversy controls the medical mind of to-day as much as it does. The method is at fault, for it establishes nothing. It simply asserts that a certain number of doctors think one way, and a lesser number, probably governed by much more valuable experience, think differently.

In the winter of 1873-'74 I made an effort to determine some unsettled climatic questions by thoroughly canvassing the experience of the medical profession. The result would have been satisfactory were it not for the foregoing criticism. Dr. J. H. Tyndale's late circular, the replies to which were summarized in the "New York Medical Journal," should have resulted in something more trustworthy, because of the later period and the character of the correspondents selected, as having some authority on the question of climate. But the criticism is still in force, and this association has much to do to bring the medical mind "down to bed-rock"—as they say out in the far West—down to something that is sure and settled, something we can pin our faith to and not be disappointed.

I shall endeavor to base the results of this analysis upon facts to be presented, if possible, in a new light, and supported by stated experience, so that your individual judgments will decide that the conclusions are well sustained.

It is to me a pleasing thought that, as scientific searchers after truth, your verdicts as to these conclusions will have no *political* significance, but will be given impartially according to the proofs presented, even though my decisions are contrary—as they will be—to the prevailing beliefs advanced by authors on the practice of medicine.

Instead of the relative humidity alone, I shall prefer the absolute humidity also—i. e., the number of grains of vapor to the cubic foot of air—as the criteria of dryness. The former is only relative at most, and very delusive, if the question of temperature happens to be forgotten. A cool or cold temperature, however, is the chief factor in the production of real dryness or low absolute humidity. It is, then, for me to defend *coldness*, *variability*, and *stimulation* as against their opposites, *warmth*, *equability*, and *enervation*, and to show, as I shall, that variability is the companion of dryness, and equability of moisture.

A definition is here needed as to what is *variability*, or its opposite, *equability*. To be sure, one place may be equable in your judgment that is more equable than another; but when a climate ceases to be equable and has become variable has not yet been definitely determined. In the absence of anything more definite, I should say the mean of inhabited climates as to changeability should be the line between *variability* and *equability*. I believe this is the only just line we can draw between the two forces placed in opposition. The fairness of this division will better appear as we proceed.

* Read before the American Climatological Association, May 8, 1884.

While altitude, wind, and exposure have much to do in determining the variability of a climate, I think I am right in saying the principal index of this character is the actual humidity. This real humidity is chiefly governed by temperature, for the air can hold invisible vapor in a rapidly increasing amount as temperature changes from cold to hot. From such conditions as solar influence, altitude, latitude, rain, radiation, winds, exposure, etc., the temperature of the air is determined; and these conditions, with temperature as their index, determine the atmospheric humidity. It is almost permissible, then, to say climate is absolute humidity, so much is the latter the key to every attribute of the former.

It is in harmony with this close association of temperature with actual humidity for me to propose the following subdivisions of climate, which I do on my own authority, and will ask you to accept them, that we may each of us have a clear conception of what the other means in speaking of dryness, equability, etc. I divide climate into four divisions:

1. Excessive dryness, } giving variability.
2. Moderate dryness, }
3. Moderate moisture, } giving equability.
4. Excessive moisture, }

Let us now continue the analysis so as to localize these divisions. The defenders of equability, according to the replies Dr. Tyndale received in the correspondence already referred to, would combine that quality with dryness, and some of them even with high altitude! My friends, take all the ground you choose, but do not be so generous to your side of the question as to leave us in doubt what you mean by the terms you use. You may have a great deal of *latitude*, but not much *altitude*. I will promise not to douse you under the level of the sea if you in turn will not force me to the top of Pike's Peak or to the region of the North Pole. We both of us prefer to remain where life can be enjoyed with a moderate degree of comfort. I, however, am willing to include the altitude of ten thousand feet for this latitude in summer, and you may include the torrid zone at sea-level in winter if you choose.

It has given me greater gratification than I can express to you to succeed in producing a classification of climates which I trust will merit your approval, as it is calculated to blot out the inconsistencies which have hitherto run riot in the medical mind. How this classification unfolds will appear as we proceed.

Right here I wish to acknowledge the favor conferred not only upon myself, but upon us all, by the Signal Service Bureau. They have furnished me the following statistics for the stations in the United States, one hundred and thirty-six in number, averaged, as I requested, by seasons—viz., the mean temperature, mean relative humidity, mean dew-point, mean cloudiness (scale of 0 to 10), mean maximum temperature, mean minimum temperature, mean daily range of temperature, mean monthly extreme ranges of temperature, mean inches of rainfall, mean vapor tension, and mean absolute humidity. I feel that General W. B. Hazen, Chief Signal Officer, and Lieutenant H. C. Dunwoody, assistant, deserve much of the credit for the valuable conclusions that are here obtained from these statistics.

Having thus at hand the absolute humidity for the United States, in grains of vapor to the cubic foot of air, I attempted to classify the climates, represented by each of the seasons, for the 45th, 40th, 35th, and 30th parallels of latitude, basing the divisions upon what I know of those climates as belonging to a fair proportionment for excessive dryness, moderate dryness, moderate moisture, and excessive moisture. I was happily surprised by the uniformity of increase in all my subdivisions from the lesser to the greater moisture, and the harmony these divisions seemed to maintain with the changing capacity of the air to contain vapor for equal divisions of temperature. In fact, after many other calculations, I found it took but very slight corrections to make all my subdivisions bear this relation to each other—viz., of the absolute humidity at saturation under 40 per cent. for excessive dryness, 40 to 60 per cent. for moderate dryness, 60 to 80 per cent. for moderate moisture, and above 80 per cent. for excessive moisture. As the absolute humidity depends upon temperature, isotherms were substituted for parallels of latitudes. The faults of these subdivisions were then neutralized by appropriate corrections for relative humidity and cloudiness, and the rule was found to work well for all places.

This first rule was as follows: The relative and absolute humidities and cloudiness in hundredths being known of a given place, find the grains of vapor at saturation either by working it out from the first two or by referring to the first two columns in Glaisher's tables (see Table I), and then take 40, 60, and 80 per cent. of this as the dividing lines between the four divisions of climate. Then correct the absolute humidity for the place to be rated by multiplying it by 100 plus the excess of the relative humidity above the mean 67 per cent., and plus the excess of cloudiness above the mean of $4\frac{1}{2}$ per cent., or by 100 minus these differences if they are below the means.*

Compare this result with the rating numbers already obtained, and the grade of the climate as to dryness is determined.†

Thus every climate is rated forward or backward from where its absolute humidity would seem to place it, according to its excess or deficiency of relative humidity and cloudy weather.

* The mean of 67 for relative humidity for the United States I obtained by several methods of computation; for instance, taking places on isothermal lines to represent the whole country, and also by comparing the fifteen highest with the fifteen lowest relative humidities for all the seasons. The mean of cloudiness was obtained by adding all the means together and dividing by the whole number.

† For instance, Los Angeles, Cal., has an autumn temperature of 64°, relative humidity 65·2, cloudiness 23 per cent., and absolute humidity 4·01 grains to the cubic foot. The capacity of the air to hold moisture at the temperature given is 6·54 grains. The rating divisions then are: Excessive dryness, under 2·64; moderate dryness, 2·64 to 3·95; moderate moisture, 3·95 to 5·27; and excessive moisture, above 5·27 grains. The correction for relative humidity is 02, and for cloudiness 21 per cent., which gives a rating number 2·83 according to the rule. This moves Los Angeles from moderate moisture back into moderate dryness, its more appropriate position for that season of the year, while Washington, D. C., with an absolute humidity of 3·73 grains, because of both relative humidity and cloudiness being above the mean, is rated forward from moderate moisture into extreme moisture for the same season.

While this rule worked nicely, throwing places of great absolute humidity, high relative humidity, or much cloudiness, proportionately to these excesses, toward the extreme of moisture, and those of opposite preponderance toward the extreme of dryness, according to their deserts, yet there appeared to be objections to it, as stated, which would not obtain with one dependent upon the unchanged records as given by the Signal Service. Besides, the necessity to carry out long computations for each place to be rated, and the possible charge that the rule given was arbitrary, finally led me to change the plan of classification to the following, which is based upon a definite proportion of the rating influence being given to each of the three elements which make up or indicate *dryness*—i. e., relative humidity, absolute humidity, and sunshine or cloudiness, its opposite, which we have definitely determined by the Signal Service. As nearly

TABLE I.

The Rating Table determining the Means of Dryness, made up from 67 per cent. of Saturation, 67 per cent. for Relative Humidity, and 44½ per cent. for Cloudiness, and obtaining One Third of their Sum. See Column (4).

(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Temperature, Fahr.	Glaisher's Table. Weight in grains of vapor in a cubic foot of saturated air.	Sixty-seven per cent. of column (2) in tenths of a grain of vapor.	Rating means of A, H, R, II, and cloud- iness combined.	Temperature, Fahr.	Glaisher's Table. Weight in grains of vapor in a cubic foot of saturated air.	Sixty-seven per cent. of column (2) in tenths of a grain of vapor.	Rating means of A, H, R, II, and cloud- iness combined.
Deg.				Deg.			
0	0.545	3.65	38.4	58	5.39	35.98	49.1
2	...	...	38.5	59	...	...	49.5
4	0.649	5.17	38.5	60	5.77	38.66	50.0
6	...	...	38.7	61	...	...	50.4
8	0.772	5.17	38.9	62	6.17	41.34	50.9
10	...	...	39.0	63	...	...	51.3
12	0.916	6.14	39.2	64	6.59	44.15	51.7
14	...	...	39.4	65	...	...	52.3
16	1.090	7.30	39.6	66	7.04	47.17	52.9
18	...	...	39.8	67	...	...	53.4
20	1.298	8.70	40.1	68	7.51	50.32	53.9
22	...	...	40.3	69	...	...	54.6
24	...	...	40.5	70	8.01	53.67	55.3
26	1.674	11.22	40.9	71	...	...	55.7
27	...	...	41.4	72	8.54	57.22	56.2
29	1.892	12.68	41.4	73	...	...	56.8
30	...	...	41.5	74	9.10	60.97	57.5
32	2.13	14.27	41.9	75	...	...	58.1
33	...	...	42.1	76	9.69	64.92	58.8
34	2.30	15.41	42.3	77	...	...	59.5
35	...	...	42.5	78	10.31	69.07	60.2
36	2.48	16.62	42.7	79	...	...	60.6
37	...	...	43.9	80	10.98	73.56	61.2
38	2.66	17.82	43.1	81	...	...	61.9
39	...	...	43.3	82	11.67	78.18	62.7
40	2.86	19.16	43.6	83	...	...	63.5
41	...	...	43.8	84	12.40	83.08	64.3
42	3.08	20.63	44.0	85	...	...	65.1
43	...	...	44.2	86	13.17	88.24	66.0
44	3.32	22.24	44.5	87	...	...	66.9
45	...	...	44.8	88	13.98	93.67	67.9
46	3.56	23.85	45.1	89	...	...	68.8
47	...	...	45.4	90	14.85	99.50	69.8
48	3.82	25.59	45.7	91	...	...	70.8
49	...	...	46.0	92	15.74	105.45	71.8
50	4.10	27.47	46.3	93	...	...	72.8
51	...	...	46.6	94	16.69	111.82	73.9
52	4.32	29.42	47.7	95	...	...	75.0
53	...	...	47.4	96	17.68	118.45	76.1
54	4.71	32.56	47.8	97	...	...	77.3
55	...	...	48.1	98	18.73	125.49	78.5
56	5.04	33.77	48.4	99	...	...	79.7
57	...	...	48.7	100	19.84	132.93	81.0

as could be done, a third of the rating influence was given to each record indicating dryness or moisture, and the mean between these extremes was approximately determined to be 67 per cent. for relative humidity, 67 per cent. of saturation at the given temperature of the place for absolute humidity, to be expressed in tenths of a grain of vapor to the cubic foot of air, and 44½ per cent. for cloudiness, zero being no clouds and 100 constant cloudiness. Thus, for rating purposes, I constructed the foregoing table, based upon the means obtained.

In the last column (4) in this table we have the mean of relative humidity (67), the mean of cloudiness in hundredths (44½), and the mean of absolute humidity for different temperatures (see column 3) added together, and the sum divided by 3 to obtain the mean of all. By this last—the combined mean as to dryness or moisture—all places can be compared, the average temperature, relative humidity, absolute humidity, and cloudiness of which are known for a given time. The rule is thus simplified to a rating-table for all climates. For instance, Denver, for the autumn of 1883, with an average temperature of 50.4° F., has a rating mean, according to the table, of 46.3°; while the record shows relative humidity 50.1 and cloudiness 20 per cent., and absolute humidity, in tenths of grains, 18.9. A third of these three is 29.7. Denver, then, stands to the mean for the United States for that season as 27.7 is to 46.3, or 16.6 on the dry side of the mean. New York city, with temperature 53.9, has a rating number of 47.8, and with R. H. 69.9, cloudiness 51, and A. H. 32.9, gives a record of 51.3, or 3.5 on the moist side of the rating mean for that same season.

Thus continuing, all the seasons for all the Signal Service Stations in the United States were rated. I then found that twelve, or 12 per cent. on either side of the proper mean, would include nearly all the excesses or deficiencies. Only exceptionally moist or exceptionally dry places would exceed this limit. I therefore gave the first six excess or deficiency to *moderate moisture* and to *moderate dryness*, respectively; and the next six excess or deficiency to *extreme moisture* and to *extreme dryness*, respectively. The finally accepted *climatic rule for dryness* can then be simply stated thus:

With the combined mean of relative humidity and cloudiness per cent., and absolute humidity in tenths of a grain of vapor (see Table I [4]), compare one third of the sum of the actual records given of the same attributes for any place, and the difference, plus or minus, shows the rate of the given climate.

The question may be asked, Are you sure you have not been unjust to damp climates and too generous to very sunny ones in giving nearly one third the rating influence to cloudiness? I think not, most decidedly. The Signal Service estimates all over the country, both of temperature, absolute and relative humidity, are taken *behind the blinds*, and the wonderful influence of the sun, the source of everything that is good in climate, is literally "thrown into the shade" by what we have hitherto trusted as climatic records. This is a most important though a neglected consideration, especially in the clear air of such climates as are found in

TABLE II.

SHOWING COMPARISON OF TWENTY-FIVE DRY WITH TWENTY-FIVE MOIST LOCALITIES, CHOSEN FROM ONE HUNDRED AND THIRTY-SIX SIGNAL-SERVICE STATIONS.

STATIONS.	MEAN TEMPERATURE.	MEAN RELATIVE HUMIDITY.	MEAN CLOUDINESS IN HOURS—0 BEING NO CLOUDS.	MEAN ABSOLUTE HUMIDITY IN GRAINS OF VAPOR TO CUBIC FOOT OF AIR.	MEAN DEW-POINT.	MEAN DAILY RANGE OF TEMPERATURE.*	RATIO OF EACH CLIMATE AS TO DRYNESS.†
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Spring. Summer. Autumn. Winter.	Spring. Summer. Autumn. Winter.	Spring. Summer. Autumn. Winter.	Spring. Summer. Autumn. Winter.	Spring. Summer. Autumn. Winter.	Spring. Summer. Autumn. Winter.	Spring. Summer. Autumn. Winter.
FIVE DRYEST.							
Fort Yuma, Arizona.....	69.6 90.1 73.2 55.1	40.1 31.8 28.8 15.0	1.9 2.8 1.9 2.8	2.4 9.68 7.37 3.31	2.21 42.9 67.3 44.2	28.8 30.1 28.9 20.4	1c+9 1c+7 1c+4 1c+4
El Paso, Texas.....	62.8 89.0 60.7 45.0	31.2 14.0 33.0 50.4	1.5 2.8 1.9 2.8	2.1 8.0 3.0 2.97	1.70 28.9 40.6 40.9	25.3 31.8 32.1 26.3	1c+15 1c+13 1c+4 1c+1
La Mesilla, New Mexico.....	60.8 81.5 68.8 43.4	22.1 14.1 19.5 26.4	1.1 2.5 3.7 1.4	1.44 3.88 2.91 1.60	22.3 48.7 46.7 25.3	37.8 33.2 32.0 31.6	1c+14 1c+9 1c+3 1c
Red Bluff, Nevada.....	47.7 69.0 41.1 30.6	31.2 35.5 42.1 55.5	3.5 3.1 2.4 3.4	1.21 2.66 1.5 1.06	18.7 30.7 24.5 15.0	33.1 25.1 21.4 19.7	1c+12 1c+7 1c+1 1c
Prescott, Arizona.....	50.6 69.8 62.3 36.8	47.5 48.9 47.1 38.1	1.9 2.7 2.0 2.7	1.77 3.55 1.9 1.50	37.4 45.8 50.1 25.6	33.7 30.1 31.4 30.8	1c+7 1c+6 1c+6 1c
FIVE FIRST HALF EXTREME DRYNESS.							
Santa Fe, New Mexico.....	49.9 69.4 68.3 30.1	43.2 46.4 32.1 15.1	3.5 3.5 2.9 3.1	1.19 3.74 1.54 1.10	18.2 40.7 23.9 16.3	23.9 25.0 23.1 22.3	1c+5 1c 1c+6 1c
Denver, Colorado.....	47.9 69.1 50.4 28.6	55.0 50.8 51.5 44.2	3.0 3.0 2.5 1.9	3.78 1.83 1.92 3.00	40.9 23.4 14.5 31.4	21.4 27.2 32.0 1a	1c+3 1c+3 1c+3 1c
Fort Davis, Texas.....	60.9 74.2 60.1 42.3	11.1 50.6 37.5 15.1	1.2 2.9 4.0 2.6	3.1 2.21 4.33 3.51	1.56 33.0 51.5 30.0	24.5 27.7 23.8 21.8	1c+6 1c 1c 1c
Red Bluff, California.....	50.6 81.7 61.2 41.6	39.2 31.5 35.9 39.9	3.2 1.3 3.2 1.1	3.12 3.73 2.6 2.24	12.8 47.4 41.9 37.4	23.2 22.5 17.2 1b	1c+21 1c+7 1c 2a
Fort Grant, Arizona.....	55.5 69.6 60.0 43.0	38.1 46.3 41.3 35.7	2.5 4.8 2.1 3.2	1.84 4.15 1.97 1.76	28.7 50.6 31.2 27.3	26.1 22.5 22.8 20.9	1c+10 2a 1c+10 1b
FIVE SECOND HALF EXTREME DRYNESS.							
Fort Elliott, Texas.....	54.5 74.0 55.9 41.1	45.4 38.7 49.3 57.4	3.8 1.0 2.7 3.0	2.50 5.28 3.0 1.30	38.3 57.3 41.5 17.1	25.5 22.7 26.0 25.6	1b 1a 1b 1b
Salt Lake, Utah.....	49.9 64.3 54.5 28.0	46.9 32.9 49.4 56.5	5.0 3.7 4.3 5.4	1.80 3.0 2.12 1.70	33.0 49.1 31.7 18.1	19.3 22.2 19.0 14.6	1a 1c+12 1b 2b
Cheyenne, Wyoming.....	40.4 61.4 41.4 23.2	56.5 50.7 41.7 34.7	4.8 3.8 2.7 3.3	1.50 3.8 1.37 0.77	23.8 42.2 21.7 7.9	24.3 20.8 28.1 22.5	1c 1b 1c+3 1c
Fort Apache, Arizona.....	50.1 69.0 51.8 33.7	31.4 35.9 43.6 61.8	4.7 2.4 2.5 3.4	1.92 3.81 2.21 1.70	29.9 48.0 39.1 25.3	31.1 27.8 26.8 20.8	1c+3 1c 1c+1 1c
Eagle Rock, Idaho.....	38.2 66.3 34.7 16.7	63.7 50.2 62.3 73.6	1.0 1.1 3.1 1.9	1.63 2.56 1.67 0.81	25.4 37.2 25.0 9.6	23.7 31.5 35.5 30.4	2b 1c+15 1a 2c
FIVE FIRST HALF MODERATE DRYNESS.							
Fort Assinibola, Arizona.....	39.8 65.3 60.7 32.1	46.7 32.0 41.6 18.1	5.4 2.2 4.1 1.8	1.20 3.2 1.71 1.50	30.0 36.5 34.3 18.6	21.7 20.7 20.0 20.6	2a 1c+2 2b 2a
Fort Maculins, Montana.....	31.1 61.1 34.9 18.1	49.3 45.3 45.4 62.2	3.9 5.0 5.0 5.8	1.3 2.12 4.1 1.40	50.5 35.5 35.5 21.7	16.7 21.1 23.5 20.4	2a 1c+3 2b 2a
Fort Cocho, Texas.....	63.5 81.2 62.2 42.8	50.8 51.1 49.2 42.2	1.5 4.0 2.6 3.4	3.81 5.96 1.90 2.16	47.6 61.6 43.4 22.9	27.5 12.9 23.8 2c	2c 2b 1a 2c
Sacramento, California.....	58.5 72.6 61.1 41.5	48.9 58.4 68.8 78.8	2.8 0.7 2.1 2.6	3.74 1.91 2.95 2.01	42.3 57.5 48.7 37.5	30.0 28.8 30.7 15.7	2c 1c+4 2c 2a
Lewiston, Idaho.....	51.6 72.2 50.0 28.5	52.4 41.9 62.8 76.9	5.1 2.9 5.1 6.5	2.56 4.22 2.51 1.90	37.5 45.1 36.5 20.1	21.8 37.2 17.5 12.5	2a 2a 2a 3c
FIVE SECOND HALF MODERATE DRYNESS.							
Los Angeles, California.....	58.7 69.2 60.0 54.1	73.4 72.1 65.5 55.1	3.7 3.2 3.3 2.9	3.87 5.17 1.91 2.67	48.5 38.7 40.6 37.8	23.2 25.1 25.7 21.8	3a 2a 1b 1c
Yankton, Dakota.....	42.3 58.4 46.0 11.5	63.0 49.9 60.0 64.7	7.2 5.0 3.3 3.0	4.7 3.88 4.62 3.08	49.0 39.0 53.3 36.1	85.3 21.1 22.0 22.1	3a 2a 1a 2a
San Diego, California.....	58.5 68.1 63.4 54.3	71.6 75.0 69.2 61.9	3.8 2.6 2.6 3.4	5.87 5.48 3.28 2.86	48.7 50.7 51.8 40.1	11.8 11.7 15.6 17.2	3a 2a 2c 1a
Dodge City, Kansas.....	51.4 52.8 52.2 26.7	54.4 69.1 66.0 64.6	4.7 3.4 3.4 1.8	2.32 5.65 2.81 1.5	49.0 38.0 37.7 17.4	24.1 25.0 28.5 23.8	2c 2a 2c 2a
Cape Mendocino, Cal.....	48.8 58.9 54.2 26.0	83.2 80.1 78.0 80.1	3.8 0.8 2.5 5.0	3.30 4.53 3.97 1.60	54.1 52.2 41.4 39.5	11.7 11.8 11.7 11.0	3c 2c 2a 2a
FIVE FIRST HALF MODERATE MOISTURE.							
Lynchburg, Virginia.....	55.1 70.4 58.3 38.4	45.6 60.7 67.8 62.8	5.5 5.8 4.5 5.1	2.90 5.55 3.55 1.81	37.7 41.9 43.2 28.3	15.3 17.4 16.3 11.8	2b 3a 2a 3a
St. Paul, Minnesota.....	42.3 58.4 46.0 11.5	63.0 49.9 60.0 64.7	7.2 5.0 3.3 3.0	4.7 3.88 4.62 3.08	49.0 39.0 53.3 36.1	85.3 21.1 22.0 22.1	3a 2a 1a 2a
Leavenworth, Kansas.....	53.2 73.5 63.5 37.9	45.6 67.6 72.7 58.2	4.2 4.1 5.5 3.5	6.25 3.98 1.21 3.69	62.6 41.8 18.9 19.0	19.4 19.3 15.7 1c	3a 3a 3a 3a
Savannah, Georgia.....	64.8 82.1 68.1 45.0	63.7 71.7 73.0 68.9	4.5 5.1 4.1 5.1	4.38 8.55 4.57 3.61	51.9 51.1 58.4 46.7	16.2 15.2 15.1 10.8	3c 3c 3b 3b
San Francisco, California.....	54.1 58.9 55.6 48.8	71.7 80.1 78.8 75.3	3.9 4.3 3.5 3.9	3.68 4.45 4.14 2.91	45.6 52.2 50.4 40.4	11.4 10.2 10.2 8.8	3b 4a 3b 3a
FIVE SECOND HALF MODERATE MOISTURE.							
Atlanta, Georgia.....	59.3 70.9 62.4 44.4	55.8 67.7 68.7 74.0	5.0 5.7 4.4 6.3	3.01 6.08 1.20 2.05	46.5 64.3 31.3 37.9	18.0 15.4 15.7 15.7	3a 2c 3b 4a
St. Paul, Minnesota.....	42.3 58.4 46.0 11.5	63.0 49.9 60.0 64.7	7.2 5.0 3.3 3.0	4.7 3.88 4.62 3.08	49.0 39.0 53.3 36.1	85.3 21.1 22.0 22.1	3a 2c 3a 4a
Jacksonville, Florida.....	68.1 81.0 71.5 58.8	72.3 78.7 77.3 73.2	4.1 5.1 3.9 4.1	5.10 8.55 3.36 1.45	33.4 63.0 53.2 15.9	11.2 11.1 16.0 1b	3a 4b 3c 3c
Washington, D. C.....	50.7 71.1 56.1 33.7	68.3 69.0 71.1 75.5	5.9 5.1 5.1 5.1	2.81 6.25 3.73 1.76	30.5 62.1 17.5 36.2	28.4 18.0 18.7 16.1	3c 3c 3c 3c
Boston, Massachusetts.....	43.7 60.3 49.7 38.3	69.3 60.3 71.4 71.7	5.2 4.6 5.6 5.1	2.42 5.38 2.91 1.29	33.5 58.3 41.2 19.9	18.5 20.8 15.2 17.6	3c 3a 4a 3c
FIVE FIRST HALF EXTREME MOISTURE.							
Milwaukee, Wisconsin.....	40.6 55.2 48.0 19.1	68.7 73.1 73.2 70.9	6.1 5.4 5.7 5.0	1.31 1.33 2.81 0.84	30.6 55.7 39.3 11.2	14.4 13.6 11.7 14.9	2c 4a 4a 4b
St. Louis, Missouri.....	45.7 70.0 51.7 25.0	78.8 73.6 75.0 71.7	5.5 5.1 5.2 5.2	2.75 3.83 1.74 0.78	38.9 43.2 41.2 22.4	14.0 13.8 13.8 14.7	4c 4a 4a 4c
Nashville, Tennessee.....	57.8 75.0 60.0 40.0	64.0 64.9 73.1 75.5	5.5 5.9 5.3 7.0	3.42 3.14 4.53 2.8 4.6	26.3 52.4 34.9 19.1	18.0 16.9 10.7 4b	4c 4a 4c 4c
Galveston, Texas.....	69.5 83.8 73.1 54.5	74.3 71.7 71.8 61.9	6.0 5.0 4.6 5.8	6.05 8.68 1.69 1.61	73.4 64.4 49.7 19.3	19.0 18.8 10.2 4c	4c 4c 4c 4c
St. Louis, Missouri.....	45.7 70.0 51.7 25.0	78.8 73.6 75.0 71.7	5.5 5.1 5.2 5.2	2.75 3.83 1.74 0.78	38.9 43.2 41.2 22.4	14.0 13.8 13.8 14.7	4c 3c 4c+1 4c
FIVE SECOND HALF EXTREME MOISTURE.							
Grand Haven, Michigan.....	40.8 54.7 48.5 21.1	70.6 77.7 77.8 73.9	5.5 4.6 5.7 7.2	3.01 3.91 1.20 3.11	27.3 41.3 19.9 12.6	12.3 12.4 10.8 3c	4c 4a 4c+3 4c
St. Paul, Minnesota.....	42.3 58.4 46.0 11.5	63.0 49.9 60.0 64.7	7.2 5.0 3.3 3.0	4.7 3.88 4.62 3.08	49.0 39.0 53.3 36.1	85.3 21.1 22.0 22.1	4c 4a 4c 4c
Buffalo, New York.....	38.1 63.6 48.8 25.0	72.7 74.5 73.6 61.5	6.3 5.3 5.3 7.6	1.92 5.0 2.91 1.21	29.6 56.7 49.0 16.5	13.7 12.3 14.0 12.1	4c 4c 4c+4 4c
Indianola, Texas.....	70.5 82.7 78.8 54.1	71.7 71.7 80.8 82.5	5.5 4.2 4.0 5.7	4.6 2.9 3.14 3.95	63.4 44.4 39.7 19.3	16.8 18.8 11.6 12.7	4c 4c 4c 4c
Delaware Breakwater, Del.....	47.6 51.7 55.7 35.1	78.3 81.0 80.9 80.6	5.8 5.1 4.6 6.1	2.91 6.79 4.23 2.04	10.7 61.9 51.1 30.7	12.1 12.6 10.7 12.5	4c 4c 4c 4c
FIVE GREATEST MOISTURE.							
Brownsville, Texas.....	73.7 82.3 73.1 58.1	77.4 79.7 80.9 79.5	6.6 5.1 5.1 6.0	9.0 9.0 8.0 6.5	4.3 45.3 41.1 12.5	14.8 11.5 16.0 16.7	4c+1 4c 3a 4c
Alaterra, North Carolina.....	50.1 72.0 51.7 25.0	78.8 73.6 75.0 71.7	5.5 5.1 5.2 5.2	2.75 3.83 1.74 0.78	38.9 43.2 41.2 22.4	14.0 13.8 13.8 14.7	4c 4c 4c 4c
Charleston, S. Carolina.....	62.9 81.2 67.6 35.2	76.0 80.3 82.3 89.9	4.5 5.1 5.1 4.8	4.77 9.89 1.5 3.94	51.5 48.1 48.8 15.5	13.7 13.5 13.7 13.5	4c 3a 3a 4b
Fort Macon, N. Carolina.....	56.7 77.1 64.5 45.8	81.2 82.8 83.8 80.8	5.9 5.2 5.2 5.6	4.2 8.8 3.66 1.60	51.9 51.7 58.5 38.1	13.9 11.2 15.2 14.2	4c+3 4c 4c 4c
Fort Huron, Michigan.....	37.4 64.6 47.4 20.9	70.9 77.2 77.9 85.7	6.3 5.8 5.6 7.2	1.97 5.10 2.91 1.13	30.7 56.7 40.3 17.0	15.3 10.0 14.7 13.7	4c 4c 4b 4c+4

* I. e., the difference between the mean maximum and mean minimum temperatures.

† Composed of the mean of relative humidity, cloudiness in hundredths, and absolute humidity in tenths of a grain of vapor to cubic foot, rated according to the rating table. Figures: 1 = Extreme dryness; 2 = moderate dryness; 3 = moderate moisture; 4 = extreme moisture. Letters a, b, and c = thirds of each division reckoned forward or backward from middle division 3. Six hundredths are given to each division, and the plus figures (1c+9, etc.) indicate the excess of certain places.

the western elevated plateaux, where the powerful effect of sunshine is quickly recorded by the metallic thermometer, and its absence as remarkably noted in the shade (see Diathermancy, farther on). Were it not that sunshine so often goes hand in hand with low humidity records, I should be in favor of giving it more, rather than less, influence in the rating of climates.*

To still further localize each climate with reference to others in the same division, I subdivided each of the larger into three smaller divisions, a, b, c, reckoning forward and backward from the middle line between moisture and dryness.

Thus, having rated over again all the signal stations in the United States, using figures, 1, 2, 3, 4, to designate the four divisions of climate, and the letters a, b, c, the appropriate thirds in each, I had ample source from which to choose proper climates to illustrate the discriminating operation of my rule. To make up the following table (Table II), I chose the driest five and the moistest five stations, and, besides these, five stations to represent each half of each division of climate, preferring those places which are well-known to climatologists, and which, collectively, besides fairly representing the whole area of the United States, have a somewhat uniform rating for the four seasons of the year.†

Besides the rating of each climate by seasons (see last column), the table contains all the factors which, with the rating means in Table I (4), are used in giving each climate and season its proper grade as to dryness. The nine columns contain the following means by seasons: Temperature, relative humidity, and absolute humidity, per cent. in tenths of grains to the cubic foot; dew-point and rainfall in inches; daily range of temperature, monthly extreme ranges of temperature, and rate of each climate expressed in figures 1, 2, 3, 4, and letters a, b, c, as described. (See page 286.)

As it is during winter chiefly that the invalid must have a change of climate, the classification for that season, accord-

ing to the rule, would give a very desirable table. The following table (Table III) is the exact rating for the year 1883, in order of dryness, the several divisions being separated into groups to indicate their position in the whole scale. Their mean temperatures are added, because temperature, a most important factor, is to have a separate consideration, according to the needs of individual invalids and the esteem in which different physicians hold the arguments in favor of a cool rather than warm temperature. Extremely dry places of widely different temperatures are, however, given, and by the aid of this and the preceding table one may make a choice, with definite reasons for his preference. (See page 288.)

While the great majority of signal stations are located in the moister sections of the United States, it is easily seen, by rating all stations for winter, that many are advanced toward the extreme of moisture by the relatively greater dampness due to the lowering temperature of that season. It is in winter that the minimum number of places are found in our first two, or dry, divisions—i. e., 13 in extreme dryness, 14 in moderate dryness, 38 in moderate moisture, and 71 in extreme moisture.*

Following out our plan of considering dryness as indicated by the amount of moisture in the atmosphere, let us see how this humidity is influenced by the varying conditions which make up climate—i. e., how dryness is produced. We will consider these conditions in the following order:

1. Dryness affected by temperature.
2. Altitude.
3. Latitude.
4. Seasons.
5. Distance from the ocean, etc.
6. Mountain ranges.
7. Absorbing power of earth.
8. Radiation.
9. Diathermancy.
10. Sunshine.
11. Absolute humidity.
12. Relative humidity.
13. Dryness indicated by variability.

* The rule takes into consideration temperature, absolute humidity, sunshine, and relative humidity—the four cardinal points in the climatic creed. Of course, altitude, exposure or location, forests and soil, are powerful modifiers to be considered in regard to their effect upon such a rule. We shall see further on how much these influences have already affected the actual humidity, and thus have their appropriate share in the rule. Especially is this the case with elevation, which I intend to show decidedly influences humidity, aside from its effect upon temperature, a fact which, I believe, has never been demonstrated by any one else.

† I ought to here explain that this last consideration of uniformity excluded from the table representative places in the extreme Northwest, as Fort Benton, Fort Custer, and Helena, Montana; Olympia, Washington Territory; Portland and Roseburg, Oregon, which are very generally on the dry side of the mean in summer, and decidedly on the moist side in winter and spring. With this exception, however, the fifty stations given in the table very fairly represent the United States.

The anomalies or extremes brought out by this method of rating are as follows for all the seasons of the United States Signal Stations: The greatest extremes as to dryness were Red Bluff and Winnemucca, Nevada; Visalia, California; and Eagle Rock, Idaho, for summer; El Paso, New Mexico, for spring, because of almost cloudless seasons of those places. The greatest extremes as to moisture were Spokane Falls, Washington Territory, Port Huron, Mich., and Rochester, N. Y., for winter, because of the high means of all the moisture indicating attributes for the low temperatures of that season.

* Of course, faults in the temperature and humidity statistics will greatly affect the rating result. In fact, the rule may be a means of ferreting out discrepancies, particularly in temperature records. If the temperature of a place is for any reason too high, the humidity records must be relatively too low, because the actual amount of moisture has not changed. I can not but believe that some of the large cities, like Chicago, New Orleans, Baltimore, and Boston (the 51st, 52d, 43d, and 49th, respectively, in the scale for winter), have been unjustly moved back toward dryness by the too high temperatures recorded there, where thousands of tons of coal are consumed each winter. T. C. Mendenhall, of the Ohio State Meteorological Bureau, in "Science" of March 14, 1884, in an article on "A Question of Exposure," called attention to the discrepancies between the State temperature observations and those of the Signal Service, pointing out the influence of exposure, of stone buildings—to which the Signal Service thermometers are attached—and of location, as giving higher records generally, and much less sensitive accounts of cold waves than the State observations, which are not usually located in the center of cities. He concludes: "There seems to be little doubt that for temperature measurements it would be well to put stations near rather than in large cities, and at sufficient distance from them to be free from purely local conditions."

TABLE III.

SIGNAL-SERVICE STATIONS IN UNITED STATES, RATED IN ORDER OF DRYNESS, ACCORDING TO THE CLIMATIC RULE FOR WINTER OF 1883, JANUARY, FEBRUARY, AND DECEMBER, WITH MEAN TEMPERATURE ADDED.

No. in order of dryness.	STATIONS.	Rate.	Temperature, deg.	No. in order of dryness.	STATIONS.	Rate.	Temperature, deg.	No. in order of dryness.	STATIONS.	Rate.	Temperature, deg.
OF EXTREME DRYNESS.											
1	Yuma, Arizona.....	1+4	55-1	44	Des Moines, Iowa.....	3b	17-3	90	Wilmington, N. Carolina...	4b	49-3
2	El Paso, Texas.....	1+1	45-0	45	Savannah, Georgia.....	3b	55-0	91	Moorehead, Minnesota....	4b	0-2
3	Denver, Colorado.....	1r	28-6	46	Fort Bennett, Dakota.....	3b	14-0	92	Kitty Hawk, North Carolina	4b	42-9
4	La Mesilla, New Mexico...	1r	43-4	47	Fort Buford, Dakota.....	3b	5-0	93	Mt. Washington, N. H.....	4b	4-1
5	Cheyenne, Wyoming Ter...	1r	23-21	48	Eagle Rock, Idaho.....	3c	16-1	94	Charleston, South Carolina	4b	52-3
6	Fort Davis, Texas.....	1r	43-3	49	Boston, Massachusetts....	3c	28-3	95	Cape Henry, Virginia.....	4b	40-5
7	Los Angeles, California...	1r	54-1	50	Atlantic City, New Jersey...	3c	30-3	96	Toledo, Ohio.....	4b	26-9
8	Santa Fé, New Mexico....	1r	30-1	51	Chicago, Illinois.....	3c	21-8	97	Duluth, Minnesota.....	4b	10-2
9	Prescott, Arizona.....	1b	36-8	52	New Orleans, Louisiana...	3c	57-9	98	Fort Shaw, Montana.....	4b	20-6
10	Fort Grant, Arizona.....	1b	43-0	53	Block Island, Rhode Island.	3c	32-5	99	Memphis, Tennessee.....	4b	42-1
11	Pioche, Nevada.....	1b	30-6	54	Deadwood, Dakota.....	3c	20-5	100	Smithville, North Carolina.	4b	47-5
12	Fort Elliott, Texas.....	1a	31-4	55	New Haven, Connecticut...	3c	26-8	101	Provincetown, Mass.....	4b	30-2
13	San Diego, California.....	1a	54-3	56	La Crosse, Wisconsin.....	3c	13-9	102	Mobile, Alabama.....	4b	53-6
				57	Jacksonville, Florida.....	3c	58-8	103	Atlanta, Georgia.....	4b	44-4
				58	Keokuk, Iowa.....	3c	22-7	104	Lewiston, Idaho.....	4c	28-5
				59	Philadelphia, Pennsylvania.	3c	34-2	105	Mackinac City, Michigan...	4c	19-2
14	West Las Animas, Col.....	2c	23-7	60	Palestine, Texas.....	3c	47-3	106	Knoxville, Tennessee....	4c	39-7
15	Bismarck, Dakota.....	2c	5-8	61	Fort Smith, Arkansas.....	3c	37-8	107	Boise City, Idaho.....	4c	31-7
16	Fort Stockton, Texas.....	2c	43-5	62	Barneget, New Jersey....	3c	23-4	108	Dayton, Washington Ter...	4c	27-5
17	Fort Apache, Arizona.....	2c	35-7	63	Leavenworth, Kansas.....	3c	26-3	109	Cairo, Illinois.....	4c	36-2
18	Camp Thomas, Arizona.....	2b	43-2	64	Washington, D. C.....	3c	53-7	110	Columbus, Ohio.....	4c	30-6
19	Visalia, California.....	2c	45-2	65	Cedar Keys, Florida.....	3c	60-1	111	Delaware Breakwater, Del.	4c	35-1
20	Fort Maginnis, Montana...	2c	19-6					112	Fort Macon, North Carolina.	4c	46-8
21	Salt Lake, Utah.....	2c	28-0	OF EXTREME MOISTURE.							
22	Cape Mendocino, Cal.....	2c	46-0	66	Cape May, New Jersey.....	4a	37-2	113	Marquette, Michigan.....	4c	17-1
23	Yankton, Dakota.....	2c	14-5	67	Olympia, Washington Ter...	4a	37-3	114	Indianola, Texas.....	4c	54-1
24	Fort Assiniboin, Montana...	2c	12-1	68	New York City.....	4a	30-5	115	Helena, Montana.....	4c	20-0
25	Winnemucca, Nevada.....	2c	27-9	69	Springfield, Illinois.....	4a	27-0	116	Detroit, Michigan.....	4c	26-3
26	Red Bluff, California.....	2c	44-6	70	Key West, Florida.....	4a	72-3	117	Hatteras, North Carolina...	4c	44-9
27	North Platte, Nebraska....	2c	29-3	71	Little Rock, Arkansas.....	4a	43-2	118	Brownsville, Texas.....	4c	58-1
				72	Albany, New York.....	4a	27-7	119	Oswego, New York.....	4c	26-5
				73	Vicksburg, Mississippi....	4a	50-1	120	Escanaba, Michigan.....	4c	14-8
28	Fort Benton, Montana.....	3a	18-3	74	Rio Grande City, Texas...	4a	60-7	121	Galveston, Texas.....	4c	54-5
29	Omaha, Nebraska.....	3a	19-4	75	St. Paul, Minnesota.....	4a	9-7	122	Sandusky, Ohio.....	4c	31-1
30	Fort Sill, Indian Territory...	3a	39-3	76	Eastport, Maine.....	4a	20-2	123	Nashville, Tennessee....	4c	46-5
31	Dodge City, Kansas.....	3a	26-7	77	Norfolk, Virginia.....	4a	42-2	124	St. Louis, Missouri.....	4c	28-9
32	Fort Concho, Texas.....	3a	42-8	78	Montgomery, Alabama....	4a	61-0	125	Pittsburgh, Pennsylvania...	4c	31-7
33	Dubuque, Iowa.....	3a	17-5	79	Sandy Hook, New Jersey...	4a	31-4	126	Roanoke, Oregon.....	4c	39-8
34	Lynchburg, Virginia.....	3a	38-4	80	Chinoteague, Virginia.....	4a	36-7	127	Cincinnati, Ohio.....	4c	34-7
35	Pike's Peak, Colorado.....	3a	5-1	81	Augusta, Georgia.....	4a	50-3	128	Cleveland, Ohio.....	4c	25-6
36	Davenport, Iowa.....	3a	22-7	82	Shreveport, La.....	4a	49-0	129	Spokane Falls, Wash. Ter...	4c	25-8
37	Sacramento, California...	3a	45-4	83	Milwaukee, Wisconsin....	4b	19-1	130	Portland, Oregon.....	4c	38-8
38	San Francisco, California...	3a	48-8	84	Pensacola, Florida.....	4b	55-3	131	Grand Haven, Michigan...	4c	24-1
39	Portland, Maine.....	3b	25-3	85	St. Vincent, Minnesota...	4b	3-5	132	Alpena, Michigan.....	4c	18-2
40	Huron, Dakota.....	3b	10-8	86	Indianapolis, Indiana.....	4b	29-0	133	Erie, Pennsylvania.....	4c	27-2
41	New London, Connecticut...	3b	29-4	87	Louisville, Kentucky.....	4b	36-9	134	Rochester, New York.....	4c	25-8
42	Fort Custer, Montana.....	3b	21-4	88	Chattanooga, Tennessee...	4b	43-2	135	Buffalo, New York.....	4c	23-9
43	Baltimore, Maryland.....	3b	36-0	89	Charlotte, North Carolina...	4b	42-1	136	Port Huron, Michigan.....	4c	20-9

We should then consider the *physical effects of dryness* thus produced, and, if time would allow, draw appropriate conclusions, verified by experience, as to the beneficial effects of dryness in disease. All this is too much for a paper of this character—i. e., to do it thoroughly—so I may be excused if I trust wholly to summarizing the points of evidence except where I have something new to offer.

(To be concluded.)

THE ETIOLOGY AND PREVENTION OF TUBERCULOSIS.

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LEADING advocates of the anti-germ treatment of disease have denounced as absurd any preventive treatment of phthisis not based primarily on anti-bacterial therapeutics. By such treatment it has been maintained that tuberculosis

may be stamped out. Destroy every bacillus and spore of a bacillus, and the disease must end.

The object of this paper is to discuss munitive or protecting therapeutics primarily, and incidentally the causation of phthisis.

That the bacillus may be a cause of tuberculosis all agree. Watson Cheyne's verifications were hardly needed, so full and conclusive was Koch's original proof. Many are questioning whether the bacillus is the only causative bacterium. I know of no trustworthy experiments proving a causative agency for any other bacillus or bacterium. Tausaint's cocci failed to produce the disease in Cheyne's hands. Experiments with other and indifferent irritants fail when the animals are removed from the germs of the laboratory. In short, it rests with future research to distinguish etiologically any other tuberculosis from the present bacillo-tuberculosis.

Every judicious disciple of Koch admits that the bacterium requires a special soil in which to develop, but at present the peculiarities of that soil are unknown. The question can never be settled by the mycologist alone. The pathologist and anatomist have their share to do. It is to pathologico-anatomical work that we must look for a final solution of many difficulties, if not for a final elucidation of the subject. As yet there is no accepted explanation of tuberculous predisposition. Beneke, Schottelius, and Formad have offered different solutions.

It may be eventually accepted that there are no mycological or anatomical peculiarities about the tuberculous diathesis, a depressed vitality due to any cause and exposure to the bacillus being the only factors needed for the development of phthisis.

Let me here comment on what seems a misapprehension on the part of the opponents of the bacillus. Formad, Leanning, and others assert a causative agency in the production of tuberculosis for many diseases and strong mental or physical impressions, in the wake of which the disease so often follows. Logically, it is wrong to make this assertion, however well it is to assume its truth in practical preventive therapeutics. To rule out all causation on the part of the bacillus, it must be assured that the animal tissues, weakened by the above-mentioned causes, have not been exposed to the irritating germ. It is difficult to have this assurance, as will be shown. In time some practical advance can be made by comparing the percentage in which disease is followed by tuberculosis in patients known to be exposed to the bacillus, on the one hand, and those apparently not so exposed, on the other.

Let me mention here what I have never been able to understand. How can the bacillus gain access to the circulation, presumably through the lungs, go on to the liver, kidneys, meninges, glands, testicles, joints, pleural cavities, or elsewhere, and develop only in some chosen tissue, passing by in disregard all others? Why does not the bacterium, once in the blood, develop in that presumably favorable medium in such numbers as to invade and occupy the whole organism? The common explanation of general tuberculosis is that the germ has entered the circulation. In this connection I see that Virchow, von Recklinghausen, and Rindfleisch are quoted by Formad as holding the opinion that certain local tubercular diseases are solely inflammatory in their origin. The dictum, too, that all cheesy degeneration is tubercular degeneration is certainly false. To give only one proof, Cheyne mentions, besides inflammation, the psorospermie as causative agents in this degeneration, without any aid from the bacillus.

The disease is not strictly contagious, like the exanthems, but requires a special soil—a previous weakening of the constitution. Leanning, as readers of the "Journal" know, thinks that spores are, perhaps, laid in tubercular cavities, where they develop and fly away to plant spores in similar soil. He maintains that most cases of the disease commence as fibroid, with plastic exudation, in which the bacillus is not a factor. This latter may be true, but more investigations must be made into the condition of lung tissues in this very initial stage of phthisis, much section cutting and staining

be done, before any such claim can be more than an assertion. A method of some value might be a daily searching examination of the sputa of persons affected with initial phthisis. If many examinations, competently made, show that the advent of the bacillus is coincident with ascertained softening, a point may be made against the primary agency of the bacillus. Those who would deny the claims of Koch and his followers must support their denials by work as good and conclusive as Koch's original proof. Lungs assuredly in this first fibroid condition will be obtained with difficulty if we rule out, as we ought, the lungs of animals inoculated with the bacillus.

Most men need not fear the disease. Williams says the direct conveyance of tuberculosis from one man to another by contagion is rare. Proof of this is abundant in the rarity with which nurses contract the disease. A wife contracts the disease from her consumptive husband because she has made herself susceptible by her unselfish and unthinking disregard of the laws of health.

If the disease demands a special condition of tissues, it is scientific and proper treatment to prevent its development by so fortifying the tissues as to give them immunity against the attacks of the one known causative agent. Prevent the acquirement of the diathesis, change the diathesis when acquired, sums up preventive treatment. Make the wives, relatives, and nurses of the consumptive the real patients; keep up their resistant powers, and they will not develop tuberculosis. The disease, once acquired, is generally beyond our control, but to prevent its development is feasible.

Like the East Indian who strives to secure the favor of the gods of all creeds, let us bow to the bacillus and destroy the sputa, ventilate and cleanse the apartment used by the sick. Only good to well and sick can result. Exceptionally, it might be well, for one thrown into intimate sleeping association with a consumptive in a room poorly ventilated, to wear an inhaler.

The experience of generations may have shown that only one seventh of us acquire tuberculosis, but "only one seventh of us" is a large number. Such mortality justifies all proper precautions against the bacillus.

This anti-germ preventive treatment is so enticing in its simplicity of statement and promised thoroughness that one finds it difficult not to follow it, unquestioning, wherever it may lead. Here is the cause. Kill the cause and destroy the disease. But who can contend against the myriad spores incorporated in earth and air through the ages of the existence of phthisis? Koch says: "It is probable that the bacillus clinging to particles of dust is breathed into our lungs at every inspiration." We stir them up as we walk the streets; they are in our lungs; nay, more, mounted on the white-blood corpuscles, the bacillus navigates and circumnavigates the shores of the arterial ocean watching for a favorable spot to disembark and settle.

Perhaps its home is not alone the animal tissues. Koch has proved that the anthrax bacillus has a vegetable habitat. May not the same be true of the *Bacillus tuberculosis*? We may kill the developed bacillus, but the spore is probably well-nigh indestructible, like its kindred.

For the reasons given, in view of the still unsettled state of

our pathological and anatomical knowledge on the subject, and in view of possible further bacterian discoveries, any extreme anti-germ preventive treatment can be pronounced possibly unscientific, probably deceiving, misleading and disappointing, certainly cruel and utterly impracticable.

In munitive therapeutics we deal with more manageable factors than bacilli and spores. An essential of success is an early recognition of the necessity for medical supervision. The family doctor can best conduct the treatment. Proper food, dress, sleeping-room, exercise, habits, climate, and medication, are our protective agents. What we mean by each must be fully and clearly explained in the case of any individual patient. With different patients we shall need to insist on different factors. The usual subjects for medical supervision will be the weakly with phthisical heredity or of acquired susceptibility. The earlier it is commenced the better.

About proper food it is sufficient to say that the nutrition must be kept at its highest. Directions will vary with the patient.

Clothing must be sufficient and adapted to the climate. The vagaries of fashion and ignorance will not allow us to forget this factor.

More than a third of one's life is spent in the bedroom. No treatment is complete which ignores that sleeping apartment—its size, ventilation, and exposure. This is the work of a sanitary engineer, but the physician must take his place, however imperfectly. Occasionally excess of ventilation has to be corrected. Cold air is not always pure air.

Regular exercise in the open air is of the first importance. I urge a patient while in the open air often to throw back the shoulders strongly and inspire deeply, remembering that Freund showed in 1859 that an ossification of the cartilages of the first ribs might occur early in life, and prevent or retard the development of the thorax and lung tissues. Singing or elocution may be recommended. Gymnasiums have their uses.

An efficient change of climate does not require removal to a great distance necessarily. All the change needed may often be gained by removal from low to high ground, from a place exposed to one sheltered, from an overcrowded ward to one less thickly populated. Dr. Bowditch once showed that phthisis was more prevalent where the soil was clayey than where it was light, admitting ready oxidation. A slight remove may secure this lighter soil.

The good in munitive therapeutics is shown in one instance, known to many. I allude to Miss Harriet Hosmer. All of her brothers and sisters had died of consumption, and her father determined to try what out-door life and exercise would do for her. By this treatment she was so fortified that she alone resisted the influences to which the others had succumbed. At least such is the fair inference from the full history. The great foe to out-door life is the system of public-school education with its attendant confinement and overwork, its poorly lighted and ventilated rooms.* Prevent the injury this system can work. As our

* Last autumn and winter I made some eighty examinations of the air in school-rooms. I found as high a percentage of CO₂ in one room

best work is to be done with the young, the utter subordination of physical to mental growth can hardly be too much insisted upon. Many pages could be written on this head.

Niemeyer mentions the astonishing results he has noted after taking his patients out of school.

Medication is indirect; all catarrhal and other drains upon the strength must be promptly checked. Greater attention must be given to even slight ailments than would be paid to them occurring in the stronger. Perhaps all have not seen Catlin's "Breath of Life." In this eccentric book he embodies what he deems the best single piece of advice that can be given to mankind in these words: "Shut—your—mouth." Our patients must be nose-breathers, and we should see that all impediments to nasal breathing are removed. Suppurating glands should be extirpated. The advisability of removing the non-suppurating is questionable.

With our older patients we have to consider the occupation, and perhaps recommend a change thereof, or precautions in its pursuit. For example, stone-cutters and others similarly employed should habitually wear inhalers. I feel most confident that in time none but the foolish will attempt the pursuit of many occupations without such common-sense preventives of disease, not to mention depressed vitality and discomfort. I remember, when a lad, improvising an inhaler out of two folds of a moistened woolen comforter and completing a dusty job without the discomfort experienced at its commencement. For the poor printer and those of similar callings, whose danger lies in bad air and close confinement, we can not do so much, and yet can do something by good advice.

THE DEBT OF SCIENCE TO THE LATE SURGEON-GENERAL CHARLES H. CRANE, U. S. ARMY.

By R. W. SHUFELDT, M. D.,
ASSISTANT SURGEON, U. S. ARMY.

Nearly a year has passed over our heads since the subject of this article was so suddenly and for ever removed from among us. At the time following his death there appeared in the usual places short accounts of his life and military career. All of these spoke in the highest possible terms of this side of General Crane's character, but, so far as my observation goes, no one has as yet written a line to commemorate his good deeds in another and still more important field. In my opinion, not only is the science of this country, but the science of the world at large, under deep and lasting obligations to this man and officer. Many of my scientific *confrères* may raise their eyebrows at this broad statement, and at once ask the questions, What ground have you for such an assertion? How is it possible for one, probably thoroughly unscientific himself, in the technical sense of the word, to have influenced science either for good or bad to any such marked degree? In short, what did General Crane do at any time in his life for science to merit

as 5-6 in 1,000 volumes. My findings prove again how depressing is school life.

any special notice? It will be my aim in this article, however imperfectly I may accomplish it, to satisfactorily answer these several questions and prove the foregoing statement to be by no means an empty one.

General Crane in very many particulars was great. He was a man of extraordinary will and determination, on some occasions almost carried to the point of obstinacy, and no doubt this would have often occurred had not these traits been under the most perfect control of a large, kind heart, and the highest appreciation of the sense of justice. His mind was of the most orderly cast, and his knowledge of organization keen. In habit he was cultured and refined, and possessed of, in more particulars than one, a good education. We must add to these characteristics another of which he seemed to be a very master, and this was his peculiar ability, sometimes upon the shortest of acquaintance, to read a man's entire worth; and, with an intuition almost unerring, to estimate the character of work he was best able to perform, or the position he was best fitted to fill. It is easy to be seen that a gift of this kind was of the highest value, not only to himself, but to those subordinate to him in the office that he occupied.

Such, in brief, was the man who for many years held the Assistant Surgeon-Generalship of the army, and, for a much shorter time, the Surgeon-Generalship. And, as it is now a matter of history, it is not to be wondered at that one possessed of such positive features in his character should largely influence the direction of affairs of the department of which in reality he was the virtual head. During these seventeen or more long years there was no ambition that General Crane held nearer to his heart than the perfection, using the word in the widest sense, of the medical corps of the army. Upon this he brought all and his best influence constantly to bear, using every power at his command to effect this end. Not many of these years of his *régime* had passed before his knowledge of the very nature, temperament, and capacity of every individual officer in the corps was complete, and every requirement of the whole clear to his mind; this knowledge ever ripened, too, with his years and experience.

Early in his career he became convinced that at least one element of the success of his object lay in the appreciation of the fact that the opinions of the world at large were by no means to be ignored. This conviction became a settled fact in his mind, and one of the axioms for his guidance, due to his long residence at the capital and his contact with scientific people of the country and wise men holding analogous positions in civil life.

General Crane never seemed to lose sight of the fact that the great secret of success of any organization lay in applying each and every individual composing it to the kind of work or duty he was best suited for and capable of performing. Coming from nearly all parts of the civilized world, the recipients of various educations and trainings, it is not at all surprising that he found he had many casts of men to deal with, and men, too, of correspondingly diverse natures and abilities. These, however, through one method or another, he seemed to have acquired almost a perfect knowledge of, undoubtedly aided by his own powers of ob-

servation and peculiar ability in his estimation of the characteristics of each individual officer and the needs of the corps.

No one could have given a more correct answer to the question so pertinently asked by Huxley in one of his addresses than General Crane. "Do you mean to say that there is no difference between the habit of mind of a mathematician and that of a naturalist? Do you imagine that Laplace might have been put into the Jardin des Plantes, and Cuvier into the Observatory, with equal advantage to the progress of the sciences they professed?"

If he discovered in an officer those traits that distinguished him above his fellow-officers as being peculiarly fitted as a surgeon, then he placed him where he could amputate and operate to his heart's content. It was sure in the long run to bring a return that would reflect credit upon the corps. Another is cast in a widely different mold; he is a chemist, and perhaps in many ways unfitted to be a surgeon—nay, may even have a great dislike for such work; then into the laboratory he goes, with all the facilities that the service could afford him. Another, as he has passed from post to post in his frontier duty, has shown a *constant* desire to report upon the hygienic conditions—the effects of climate, state of sewerage of buildings, air-space of hospitals, composition of foods and waters, and what not—then a position is given this officer so that all that was in him could be utilized. It was bound to bring its good returns, and certain to increase the efficiency of the whole.

If any officer developed a surplus amount of energy that was likely to carry him beyond the bounds of the sphere of action nature had designed him to play his part in, then no one sooner than General Crane applied all the rigor of military law to restrict such a luxuriant growth.

No member of the department under him was ever allowed, whatever his capacity might be, to absorb all the openings the corps had to offer.

Twice in conversation I learned from him how he regretted the chain of circumstances that threw Dr. Coues out of the army, and he said: "I believe I am right in holding him in his position, and I mean to do it as long as my influence will effect it." On the other hand, when any officer exhibited an inclination to improve the gifts he had been naturally endowed with, in any way whatever, General Crane was the first to second his efforts. To illustrate this, I must be permitted to quote a few lines from a personal letter from him that I still have in my possession and prize most highly. It is written in his own hand, and sent me on his reception of a bound copy of some of my earlier anatomical writings. In it he remarks: "It is always very gratifying to me to encourage, as much as possible, the younger members of the medical corps in any work they may undertake which promises to reflect credit on the corps and on themselves individually. It gives me much pleasure to congratulate you on the many excellent contributions you have submitted since your entrance into the Army Medical Corps, and, wishing you every success in the future, I am, etc." In my library I keep a great leather-bound book, in which I preserve many letters from eminent men who, upon one occasion or another, have in their own hand encouraged me

in a similar manner. As I say, this letter of General Crane's was received by me several years ago, when I was correspondingly younger; but so much did I esteem it at the time as an evidence of encouragement and approval on the part of the official head of the corps that I did not hesitate to consign it a place in my old volume. It must be remembered, too, that in this conservatory of mine these letters that I have spoken of bear the signatures of such men as Darwin, Huxley, Sir Richard Owen, England's anatomists; Alphonse Milne-Edwards, the physiologist of France; Alfred Russel Wallace; Pelzeln, of Austria; Joseph Leidy and Professor Baird; Collett, of Norway; J. V. Barboza du Bocage, of Portugal; Cope and Marsh, of our own country; Gegenbaur, E. Ray Lankester, Coes, A. Agassiz, Allen, and a host of others.

Such a courtesy, coming from the man General Crane was, is not likely to be forgotten by any officer, young or old, and seems to me would rarely have any effect other than to brighten his life in the service and spur him on to greater endeavor.

It was largely through General Crane's efforts that the great expeditions west of the one hundredth meridian, during the years of 1871-'74, were supplied with medical officers of the army particularly distinguished in the natural and other sciences, and it would be almost impossible to estimate the valuable results that accrued to science and the knowledge of this country that flowed therefrom in consequence.

Dr. Coes is largely indebted to the same source for what he has been enabled to do for us in American ornithology and general zoölogy.

Another large volume contains the reports upon the climate, physical surroundings, and natural history of the military posts, while another, equally large, is devoted to the hygiene of the same stations. For both of these—the work of medical officers of the army, the outcome of the same administration—this officer was largely responsible. They stand among the first glimmerings of light science possessed of our immense Western country. In another direction appeared monographs upon medical and surgical subjects, transportation of the wounded in the field, bibliographies, and other great quarto and handsomely illustrated volumes. The impulse they have given to the profession at large is simply enormous and incalculable.

To review, I think we may say in conclusion that it will be unanimously acceded that science must ever be under the greatest obligations to the late General Crane, of the United States army, for the way he fostered and cared for her votaries who were under his charge, and the wisdom he displayed throughout his administration, which brought the Medical Department of the Army to such a high state of perfection that it came to be respected, both at home and abroad, for its efficiency, as well as the professional and scientific works it gave to the world.

Contagious Pleuro-pneumonia among Cattle in the West prevails to such an extent that the Chief Inspector of the Canadian Cattle Quarantine is said to have recommended that the Dominion Government prohibit the importation of cattle from the United States into Northern Canada for breeding purposes.

A CASE OF INTESTINAL OBSTRUCTION, WITH VOLVULUS, REMOTELY CONNECTED WITH OVIARTOTOMY.

BY J. W. SHIVELY, M. D.,
KENT, OHIO.

I AM led to report the following case not because it possesses any special interest, viewed simply as a case of mechanical obstruction, but because it followed as a remote consequence, or what might be termed a delayed accident, of ovariectomy. And to my mind it has a further interest in that it furnishes a forcible argument in favor of surgical interference in cases of undoubted obstruction of the bowels. Had I profited by that radical yet sound procedure, the life of my patient might, perhaps, have been saved; at least the satisfaction would have been mine that the proper thing had been done, and that matters thereby had been made no worse.

I may state here that my patient had an ovarian tumor removed, some five or six years previous to her last illness, by Dr. Dunlap, of Springfield, Ohio. I believe the operation was a very satisfactory one, and she made a speedy recovery. But her husband has since informed me that his wife, after the operation, was greatly troubled with constipation, and subject to frequent attacks of colic. She was in the habit of using cathartic pills freely to relieve the former condition—in fact, she had become an inveterate "pill-taker." Yet, notwithstanding this, she was strong and robust, and enjoyed life equal to any, apparently. But to proceed with the case:

On the 8th of August, 1883, I was called to see Mrs. M., a bright mulatto, aged about forty-five years, who, it was said, was sick with an attack of "colic." On my arrival at the bedside I learned from my patient that, on the morning of the 5th, she took a dose of cathartic pills, which operated freely in the afternoon. In the evening she partook of some ice-cream, and soon thereafter she was taken with violent colicky pains. Her family physician was sent for, who had attended her a number of times before in similar attacks. He pronounced it "spasmodic colic," and administered a hypodermic injection of morphine, which afforded speedy relief. On the following day, however, the pain returned, accompanied by vomiting, and, for reasons not clearly stated, she sent for a homeopathist; but, not obtaining the relief she sought, after a trial of twenty-four hours, she called me in.

I found her suffering with severe pain about the umbilicus, vomiting every fifteen or twenty minutes, with an anxious look, feeble pulse, and great prostration. There was no fever, no tympanitis, nor tenderness on pressure over her bowels. I examined her carefully, thinking there might be strangulation from an undetected hernia, but I found nothing. I gave her a mixture of morphine and bismuth with camphor-water every two hours, and ordered the nurse to administer a copious enema of warm water, and afterward to apply hot fomentations. The next day, August 9th, she seemed greatly improved, the pain and vomiting had ceased, and she remarked that she felt "quite like herself" again, and "almost well." The enema, however, had failed to bring away any stool. She objected to the mixture I had prescribed the day before, so I substituted in its place

pulv. opii, in moderate doses, every four hours. The fomentations were continued.

August 10th she was worse again. The pain and vomiting again returned as bad as ever. She looked pinched, and was very uneasy. She begged me to give her something to move her bowels, declaring that if they were only moved she knew she would soon be better again. Being still uncertain in my own mind as to the true state of things, and influenced by her importunities and by her previous history, I determined, if possible, to evacuate her bowels. To this end I introduced a rubber tube into the rectum as high up as I was able (about eighteen inches), and fitted to it a Davidson's syringe. I then slowly and steadily forced up all the warm water I could, or until the resistance of the sphincter was overcome by the internal pressure. I repeated this operation three or four times, but no fecal matter came away. I now felt convinced that there was mechanical obstruction of the bowels, but the absence of tympanites and tenderness, usually so prominent in these cases, somewhat puzzled me. I gave her large doses of opium, and all the ice she desired to quench her intense thirst.

August 11th she vomited stercoraceous matter, her pulse being barely perceptible at the wrist, and her surface covered with a cold, clammy perspiration. Her mind was clear until death, which occurred on the evening of the 12th, being sick just one week.

Impressed with the idea that the obstruction was in some way connected with the former operation, I requested permission to examine the body after death. This was granted, and twenty hours afterward I made a *sectio cadaveris*. On exposing the abdomen, a long white cicatrix could be traced from the pubes to the ensiform cartilage nearly—the line of the former cut for ovariotomy.

At its lower end, about two inches above the pubes, a discolored spot, of half the size of the hand, was visible. It seemed to be in a state of gangrene, and ready to burst through; but, on closer inspection, it was found to be simply discolored from changes that had taken place within. Suitable incisions were now made so as to expose the bowels *in situ*, and it was soon discovered that the bowels had become adherent to the cicatrix at the point of discolored area mentioned. There were also extensive adhesions of the intestines to the sides and posterior wall of the abdomen, binding them firmly down, and doubtless from this cause the usual appearance of tympanites was prevented.

The intestines and cavity nearly everywhere gave evidence of former inflammatory processes.

But the most interesting discovery made was that a portion of the ileum, about eighteen inches above the cæcum, was adherent to and incorporated with the cicatrix—corresponding to the lower angle of the original wound—and that around the short portion, between this and the cæcum, a loop of small intestine was twice twisted, forming a kind of knot, and a complete and effectual barrier to the passage of the intestinal contents. The tegumental or cicatricial covering of the bowel at the point of adhesion was surprisingly thin. I have no doubt that during life the contents of the bowel might have been both felt at this point and seen, as they were forced along by the peristaltic action.

In reviewing the case several conclusions may be postulated.

1. That the bowel, by some unhappy chance during the healing of the cut for ovariotomy, became adherent to the cicatrix.

2. The bowel being thus fixed, the normal peristaltic

action was at this point interrupted, causing thereby the habitual constipation complained of, and, through errors of diet or habits, temporary obstruction—the so-called fits of spasmodic colic—were brought about.

3. The proximate cause of death was the knot or twist in the intestine occasioned by the violent action of the cathartic, assisted, probably, by some favorable position of the body, while the remote cause was the unfortunate adhesion of the bowel to the wound made for the ovariotomy.

4. That in this case no possible benefit could have been received from any treatment save that which surgery might have given—namely, the opening of the abdominal cavity and the disentanglement of the bowels.

A CASE OF MISSED ABORTION.

By J. B. TODD, M. D.,

PARISH, N. Y.

THE trouble that missed abortion may cause a patient and the blunders and errors of diagnosis that it may cause a physician to make are sufficient reasons why I should report the case that came under my observation. The fact of its not being recognized easily caused in this case a very annoying blunder in diagnosis and consequent mental suffering in the patient.

Mrs. B., aged thirty, married thirteen years, has had three children and two miscarriages. She became pregnant seven months ago, at which time she suffered terribly with nausea for six or eight weeks, when, in her words, she "had an abortion, only nothing came away." She was under the care of a physician for four weeks at that time, suffering much pain and flowing some all the time. Her attendant made no examination, but told her that she had had an abortion, and that the fetus and membranes had been discharged in small pieces so that they had not been noticed on the napkins.

She recovered so that she was around, but had much pain and weight in the back and loins, and occasional slight hæmorrhages. She finally consulted an eminent specialist, who diagnosed a malignant growth and advised its removal at once. This alarmed the patient very much, and she consulted her regular attendant, Dr. Low, of Pulaski, who diagnosed a tumor but wisely advised her to delay an operation.

I was called hastily, March 27, 1884, to relieve severe pain that she was taken with an hour before. I was told that she had a tumor, that it was thought to be cancerous, and that the pain she was suffering from came from it.

On examination, I found the hollow of the sacrum occupied by the body of the uterus, which was very hard and perhaps two inches and a half in its transverse diameter; the os was rigid, although dilated to the size of a nickel.

I easily introduced my finger, and could feel something protruding through the internal os, which had the feeling of a bag of waters presenting. I informed the patient that she was about to abort; she was greatly surprised, and told me that it was impossible, for she had menstruated for the past five months, and had no symptoms of pregnancy.

Notwithstanding all this, I held to my opinion of an abortion, for the regular uterine pains, the pre-enting bag of waters, and the enlarged uterus were enough to satisfy me of the impending issue.

I dilated the os with my finger, and in two hours and a half,

with the aid of three drachms of ergot, the mass was expelled, to the surprise of my patient; but my surprise came when I examined the *cavus belli*. It was placental upon one side, two inches and a half in diameter and about three fourths of an inch in thickness; this side was convex, and contained throughout its surface, plainly to be seen, sinuses that appeared to have been recently detached from the uterus. On the other side was the bag of waters, which had presented at my first examination; it was intact, and, when ruptured, contained about half an ounce of bloody fluid, showing not the slightest trace of a fetus, no odor, nor the least sign of putrefaction.

The lady made a good recovery, so that she attended to her usual household duties in ten days.

This patient had a missed abortion seven months ago, when she was about three months in gestation, and the fetus was macerated and absorbed. The placental attachment had been sufficient to maintain its vitality, and the bag of waters, not being ruptured, had escaped decomposition.

Cases of this kind might develop very interesting medico-legal complications.

Clinical Reports.

NEW YORK EYE AND EAR INFIRMARY.

(Aural Service of Dr. SAMUEL SEXTON.)

Neglected Otitis Media Purulenta following Vaccination, and complicated with Caries and Necrosis of the Mastoidæ; illustrating the Favorable Termination of the Disease without Active Interference.

Reported by W. A. BARTLETT, M. D., Assistant Surgeon.

The patient, a girl four years of age, was brought to the clinic on the 28th of February, 1884. Her health had always been good until two years before, when she was vaccinated. The vaccination was followed by "cow-pox gatherings" under the left arm, and in a short time by earache in the left ear. The ear soon began discharging, and has continued to run constantly until the present time. During the past six months three abscesses have formed on the left side of the head, face, and neck, one over the angle of the jaw, one in the cervical region rather posteriorly, and one—the last—came two weeks ago over the mastoid process. The patient had lost strength, was somewhat emaciated, and had had at times some febrile action. There had been no vertiginous symptoms nor facial paralysis.

Examination showed that the tissues over the mastoid process were indurated, swollen, and tender, while immediately behind the pinna and on a level with the upper margin of the concha there was a good-sized opening through which a probe, passed downward and forward, entered the antrum mastoideum. Exposed bone was detected along the sinus and in the antrum.

There was asymmetrical prominence of the auricle on the affected side. The external auditory canal, which was above the average size normally, was filled by a large polypoid mass presenting at the meatus, and bathed in an abundant, offensive, purulent discharge. The patient had some elevation of temperature and was very restless and irritable.

The first step was to remove, with forceps, a mass of granulation tissue springing from the region of the posterior wall of the canal and the mastoid antrum, and near the base of the polypus, which permitted of more thorough cleansing of the

parts with warm water by syringing as occasion required. For internal administration, calx sulphurata was ordered to be given in small doses repeated every two hours; for the pains, minute but frequently repeated doses of tincture of aconite-root were directed.

March 13th.—During the past two days the patient has been very restless and out of condition; the whole of the left side of the face and neck is somewhat swollen; there is no alteration in the condition of the post-aural region, and no marked febrile reaction. The polypus was removed with Sexton's snare, and directions were given to cleanse the canal daily and introduce powdered boric acid.

17th.—Much improvement is noticed since her last visit; the swelling about the ear has subsided, there is no pain, and the discharge from both the canal and the mastoid opening is free and copious. The post-aural opening is now dressed with a rolled cotton-wool tent saturated with tincture of calendula; insufflations of boric acid into the canal are continued.

Under this treatment decided improvement was apparent for about two weeks; after this, however, granulation tissue became much more rapidly developed, and local irritation again increased. On April 3d a polypus of considerable size, which had sprung from the base of the previous growth, was removed with the snare, and the treatment was continued as before.

It now seemed probable, from the degree of local disturbance going on, that a portion of the mastoidæ which had been the seat of caries was already sequestered, and, on April 10th, the probe detected the roughened surface of a sequestrum protruding into the external auditory canal from the direction of the antrum mastoideum. It was very firmly held, however, by the surrounding tissues, and was quite immovable.

April 17th.—Pains in the ear are again complained of, and there is some swelling of the face as well as of the tissues behind the auricle. Just within the meatus the lumen of the canal is found to be almost completely blocked up by the protruding sequestrum, and a partially detached flap of integument from the posterior wall, interfering with proper drainage.

After as much as possible of the muco-purulent secretion and caseous matter had been syringed away, it was found that the swelling of the tissues surrounding the dead bone was too great to permit of extraction by forceps without surgical interference; either the external meatus would have to be slit up freely, involving incision of the cartilage, or the auricle would require to be partially detached and turned forward—enlarging the external opening of the sinus and dividing the cartilaginous portion of the canal to some extent for this purpose—before removal could be accomplished. Rather than resort to either expedient in so young a subject, it was thought best to continue the treatment for a few days longer without interference.

24th.—The sequestrum was found to be much looser, and, although not yet fairly presenting at the meatus externus, it was firmly grasped with a Sexton's foreign-body forceps, and, after considerable traction, brought away. The ear was cleansed twice weekly, and then dressed with powdered boric acid for a fortnight after the removal of the sequestrum, when the discharge from the canal entirely ceased. The sinus behind the auricle shortly afterward closed, and the patient's physical condition was much improved. It was now found that the membrana tympani and the ossicles had entirely disappeared, and that the large cavity remaining, consisting of the tympanum, the antrum mastoideum, and the area opened up by loss of structure of the mastoidæ adjacent, was nearly everywhere covered by glistening cicatricial tissue—the transformation as regards the dermic lining having been promoted by the employment of the boric acid.

The polypoid mass removed was found, on microscopic examination by Dr. Ferguson, to be a myxo-fibroma. The sequestrum was a large one, being about three quarters of an inch in length and over a quarter of an inch in diameter at its largest portion. It was very irregular in shape, consisting for the most part of cellular mastoid substance. Before maceration it was considerably larger, but this process and the subsequent washing detached considerable friable osseous tissue.

REMARKS.—In this case the absence of facial paralysis and meningeal symptoms was noteworthy, and afforded valuable aid in arriving at the prognosis.

The calx sulphurata is believed to be exceedingly efficacious in purulent inflammations which involve the bone, especially in run-down and scrofulous subjects; it should not be discontinued too early in the treatment. One-fiftieth-of-a-grain doses, or less even, were continued throughout the active stage of the disease.

It may be said of nearly all these neglected cases where caries of the mastoidæ is present that one of the first steps to be taken is the establishment of efficient drainage from the diseased bone through the external auditory canal by the removal of polypi, granulation masses, and caseous matter wherever they are found obstructing the passage. Where this has been neglected, usually a fistulous opening through the cortex of the mastoidæ, or through the posterior wall of the external auditory canal, is formed, and drainage is thus maintained. Sooner or later, in a very considerable number of these cases, a portion of the affected bone, of greater or less size, becomes necrosed from interference with its nutrition, and a sequestrum is then detached and makes its escape in the manner above described, after which improvement usually takes place, and, indeed, very often recovery is rapid. More frequently numerous small sequestra are formed and are absorbed. In few of these cases, whether occurring in young or old, will it be found necessary to open up a new passage by trephining or drilling through the cortex of the mastoidæ, since the operation at best can but be regarded as forming an additional canal for drainage running almost parallel with the natural passage, and offering no greater facilities for that purpose. The operation, moreover, is in itself a wound in healthy structures, which may very much complicate the case, and, besides, it does not hasten the separation of sequestra, and is not more efficacious in preventing an extension of middle-ear disease to the brain than keeping the natural passage clear.

Book Notices.

Zur Kenntniss der Augenlinse und deren Untersuchungsmethoden. Von Dr. ROBINSKI, prakt. Arzt zu Berlin, etc. Berlin: Eugen Grösser, 1883. Pp. 62.

ROBINSKI, in this brochure, first criticises the different methods of investigation employed. He finds that the methods by coagulation have revealed the course of the lenticular fibers, their shape, their arrangement, and their relation to each other. He speaks highly of weak solutions of hydrochloric acid as a means of investigating the finest structural relations, especially the concentric, lamellar arrangement of the lens-tubes. For the purpose of extracting the water from the lens-tissue, Robinski regards "Müller's fluid" as the best means at our command, though it causes a shrinkage of the tissues and colors them brown. He rejects Becker's view that the lens-fibers are developed from the epithelium of the capsule. He recommends weak solutions of argentic nitrate for coloring and rendering

distinct the membranes and contours of the tubes, but, for purposes of isolation of the individual fibers, he regards weak dilutions of hydrochloric acid as still the best means at our disposal. He denies absolutely the existence of multinucleate lenticular tubes.

Medical Diagnosis, with Special Reference to Practical Medicine. A Guide to the Knowledge and Discrimination of Diseases. By J. M. DaCosta, M. D., LL. D., Professor of Practice of Medicine and of Clinical Medicine at the Jefferson Medical College, Philadelphia, etc. Illustrated with engravings on wood. Sixth edition, revised. Philadelphia: J. B. Lippincott & Co., 1884. Pp. 967. [Price, \$6.]

It is about three years since the fifth edition of this book was issued, and this fact in itself tells a tale which renders commendation unnecessary. As the work of a clear thinker and acute observer it must always be a favorite book of reference with the thinking and reading portion of the medical community. We know of no book in medical literature which is more helpful than this one to a young practitioner. Three years is too short a period of time to have produced many radical changes in the methods for the diagnosis of disease, hence we are not surprised, in turning over the leaves of this latest edition, to find it differing in few respects from its predecessor. Changes are noticeable, however, in the form of additions to the chapters upon nervous diseases, a fascinating field, and eminently so to DaCosta. We note also comment upon the recent doctrines in regard to tuberculosis. A capital drawing—the best we have seen—is given to represent Koch's *Bacillus tuberculosis*, and a guarded assent is yielded to Koch's propositions. However, pathology is not the subject of the book, and the author displays excellent judgment in confining his attention almost exclusively to the legitimate work in hand.

Legal Medicine. By CHARLES MEYMOTT TIDY, M. B., F. C. S., etc. Vol. III. New York: William Wood & Co., 1884. Pp. xxi-321. [Wood's Library of Standard Medical Authors.]

This book forms the January number of that excellent series of works—the Wood Medical Library. Its author needs no introduction, his work in the field of legal medicine having long been well known. This volume is occupied with the subjects of legitimacy and maternity, pregnancy, abortion, rape, sodomy, infanticide, drowning, strangulation, and their collaterals. A noticeable feature, perhaps the noticeable feature, of the book is the tabular arrangement of cases and judicial decisions appertaining to each subject, placed at the end of each chapter. As these are supposed to cover the field of forensic medicine (upon the given subjects, of course), their value as a means of reference will be readily appreciated.

BOOKS AND PAMPHLETS RECEIVED.

A Compend of Organic and Medical Chemistry, including Urinary Analysis and the Examination of Water and Food. By Henry Leffmann, M. D., D. D. S., Professor of Chemistry and Metallurgy in the Pennsylvania College of Dental Surgery, and of Clinical Chemistry and Hygiene in the Philadelphia Polyclinic. Philadelphia: P. Blakiston, Son & Co., 1884. [Price, \$1.]

Materia Medica and Therapeutics: an Introduction to the Rational Treatment of Disease. By J. Mitchell Bruce, M. A. Aberd., M. D. Lond., F. R. C. P., Physician and Lecturer on Materia Medica and Therapeutics, Charing Cross Hospital, etc. Philadelphia: Henry C. Lea's Son & Co., 1884. Pp. xii-547.

Proceedings of the Sanitary Conference of State Boards of Health, held at New Orleans, June 2, 3, and 4, 1884.

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Edited by
FRANK P. FOSTER, M. D.

NEW YORK, SATURDAY, SEPTEMBER 13, 1884.

AN ENGLISH VIEW OF AMERICAN GYNÆCOLOGISTS.

It is but a few weeks since the "Medical Times and Gazette," of London, berated the "Medical Record," of New York, for having allowed its humor to border on levity in discussing certain novelties in practice. Having on that occasion taught by precept what should be avoided in medical journalism, it is now teaching by example what should be done. The jocose is by all means to be eschewed, and censoriousness is the proper agent to bring into play. In its issue of August 9th it publishes a review which, for downright ill-nature, we have rarely seen matched.

The volume which the reviewer has under consideration is the "Transactions of the American Gynæcological Society" for the year 1882, and at the outset he holds Dr. Emmet up to ridicule as the author of a statement, said to have been made in regard to another matter, so astonishing that, "until the subject is better understood," the position taken by Dr. Emmet in regard to his "button-hole" operation need not be considered seriously. And for thus attacking the man, instead of criticising his paper, he further justifies himself by the statement that "the bubble was pricked by Dr. Skene." Turning to Dr. Skene's published remarks on the occasion, we find that there were radical differences of opinion between him and Dr. Emmet, but that he closed with the following expressions: "Finally I may refer to the fact that the doctor reminded us of that which we all knew, namely, that his friends and those who know him best have always given him credit for honesty in all that he does and says. In this respect I desire to be among the foremost to do him honor. At the same time it must be borne in mind that honesty of purpose does not always secure accuracy of observation or soundness of judgment. Knowing this, I have dared to entertain the impression that this remarkable contribution by Dr. Emmet, while it does not embrace all that is known on the subject, will take a high position among the accepted means of diagnosis in gynæcology." And this is what the reviewer terms pricking the bubble!

He next stigmatizes Dr. Joseph Taber Johnson's paper as "also characterized by absurd exaggeration," to which Dr. Fordyce Barker's speech "will serve as the antidote." Dr. Drysdale's paper is dismissed with the remark that "it was apparent in the discussion that he has not yet convinced the profession of the diagnostic value of these bodies," meaning the "ovarian corpuscles." Of the papers contributed by Dr. Sutton and Dr. Parvin he says neither contains anything novel. Dr. Barker's paper is praised, but only, it would appear, because it reminded the American profession of a fact that, "some might think," they had almost forgotten. Mr. Thornton's paper is mentioned without any expression of opinion.

The brunt of the reviewer's renewed attack falls upon Dr. Garrigue and Dr. Thomas, both of whose papers are said to be "very unsatisfactory," the diagnosis in many of the cases being open to doubt—in Dr. Thomas's paper, "in too many of them for the paper to be of scientific value." The ball must be drawn out from the wound, then, before he will believe that the patient has been shot! He becomes moderate again in his treatment of Dr. Busey, remarking that he "simply points out what might be expected to follow; he does not adduce any evidence that these consequences actually are produced."

But when he comes to Dr. Van de Warker's paper he plies the whip mercilessly upon that gentleman and upon the editor of this journal, although the paper written by the latter was published in the preceding volume. His particular grievance is that in neither of the papers was reference made to a certain paper on the same subject, read before the Obstetrical Society of London by Dr. John Williams in 1876, with which, he says, the one by the editor of this journal is identical, "both in title and in substance." As to the title, it was "The Mechanical Action of Pessaries"—so odd a combination of words that of course it must be conceded to be the peculiar property of Dr. John Williams. As to the substance, so far as we can judge from a brief abstract of Dr. Williams's paper, published in the "Obstetrical Journal of Great Britain and Ireland," never having seen the full text, both writers argued in favor of substantially the same views, and many of the arguments employed by the two were similar, as is often the case. It is to be assumed, then, that nobody is at liberty to allude to matters that Dr. John Williams has written on, unless he proclaims the fact that Dr. Williams has so written; yet Dr. Graily Hewitt, in an edition of which the preface is dated October, 1882, has dared to do so, and so have Hart and Barbour, whose book also was published in 1882.

The papers contributed by Dr. Warren, Dr. Richardson, and Dr. Mann are briefly referred to, Dr. Richardson's being frankly praised, and then a fresh paroxysm of rancor is brought on by Dr. Baker's paper, the title of which, by a verbal error in the review, is made to appear ridiculous. "It may well have been," says this splenetic reviewer, "that the patients professed themselves well, simply to avoid further treatment." After a Partisan shot at Dr. Thomas, whose memoir of the late Professor White is said to have been written in "a somewhat induted style," our censor is kind enough to profess to see some good tendencies in the volume after all—"a less [*sic*] tendency to exaggeration, more hesitation before jumping to conclusions, some increase of scientific skepticism—in short, a little swing of the pendulum toward conservatism, caution, and moderation." That being the case, it would be interesting to know this man's opinion of the preceding volumes.

MINOR PARAGRAPHS.

THE UNITED STATES PHARMACOPŒIA.

WE lately cited a note addressed by Dr. Farquharson to the editor of the "British Medical Journal," in which that gentleman took occasion to criticise the British Pharmacopœia, and

to suggest certain changes in the forthcoming revision. Dr. T. Lauder Brunton now writes to the editor of the same journal, agreeing with Dr. Farquharson in the main, but calling attention to the desirability of taking certain steps that have already been taken in the case of our own Pharmacopœia, especially the introduction of palatable preparations. Dr. Brunton particularly mentions and commends the abstracts of the new United States Pharmacopœia, and the substitution of sugar of milk for sulphate of potassium in the formula for making Dover's powder. He also speaks in terms of approval of the simple elixir. The suspicion has been expressed that some of the unfavorable criticism that has been showered upon our new Pharmacopœia at home is the outcome of a feeling of chagrin on the part of certain persons who felt that they were not sufficiently deferred to in its preparation. Whatever foundation there may be for that suspicion, the fact that criticism apparently sustaining the suspicion has been made makes it doubly gratifying to find the book held up as in some measure an example to the profession abroad.

NEWS ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending September 9, 1884:

DISEASES.	Week ending Sept. 2.		Week ending Sept. 9.	
	Cases.	Deaths.	Cases.	Deaths.
Typhus	0	0	1	0
Typhoid Fever.....	32	15	56	16
Scarlet Fever.....	25	4	31	9
Cerebro-spinal meningitis.....	4	4	4	4
Measles.....	37	11	39	12
Diphtheria.....	25	15	17	5
Yellow Fever.....	1	1	0	0

Cholera continues its ravages in various portions of Italy. Naples, according to the press dispatches of Thursday, being the most afflicted. Some of the cases reported in other Italian towns were of refugees from Naples. A few cases are reported in Madrid and also in Marseilles. Dispatches from London state that the sanitary condition of the city is such that no apprehension is felt of the disease obtaining a foothold there.

Oleomargarine.—Agents of the Assistant Dairy Commissioner are said to be engaged in obtaining evidence against dealers in this article. It is reported that a large number of cases will be brought into court as soon as the proper evidence can be had, and that already several summonses have been issued. It will be remembered that, according to the law passed April 24, 1884, the penalty for selling oleomargarine is a fine of from \$100 to \$500, and imprisonment for from six months to a year.

Miryachit.—In discussing this disease, which was brought to the attention of our readers by Dr. W. A. Hammond, in the "Journal" for February 16th, the editors of two Neapolitan medical journals are said to have gone by and verbal polemics, and that a challenge passed from one to the other.

It was no uncommon thing a hundred years ago for English physicians to shed each other's blood with their swords, after having shed that of their patients with their lancets, and we believe that several instances of the kind have occurred in this country.

Our confrères of the Latin races are, however, probably the only ones that continue to practice phlebotomy by either method.

The Philadelphia Maternity Hospital.—According to the "Medical and Surgical Reporter," the Obstetrical Staff of the Maternity Hospital have requested the Board of Governors to appoint a female resident physician to serve in the hospital. At a recent meeting of the Governors it was unanimously resolved:

1. "That the Maternity Hospital should have a resident physician; and
2. That the resident physician must be a woman."

The Will of the late Dr. John H. Dix provides that the Perkins Institution for the Blind, at South Boston, shall receive the sum of \$10,000, and the Massachusetts Medical Benevolent Society the sum of \$2,000. Provision is also made for summer excursions for the sick or poor children of Boston.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from August 31, 1884, to September 6, 1884:*

BYRNE, CHARLES C., Major and Surgeon. Relieved from duty in Department of California and to report in person to the commanding general, Department of the Platte, for assignment to duty. S. O. 207, A. G. O., September 3, 1884.

TOWNS, F. L., Major and Surgeon. Relieved from duty in Department of the Columbia, and to report in person to the commanding general, Department of Texas, for assignment to duty. S. O. 207, C. S., A. G. O. Granted leave of absence for twenty-five days. S. O. 127, Department of the Columbia, August 25, 1884.

HAVARD, VALERY, Captain and Assistant Surgeon. Relieved from duty in Department of Texas, and to report in person to the commanding general, Department of the East, for assignment to duty. S. O. 207, C. S., A. G. O.

HALL, WILLIAM R., Captain and Assistant Surgeon. Relieved from duty in Department of Texas, and to report in person on October 1, 1884, to the superintendent general recruiting service in New York city, for duty at David's Island, N. Y., relieving Assistant Surgeon M. E. Taylor from duty at that station. S. O. 207, C. S., A. G. O.

HOPKINS, WILLIAM E., First Lieutenant and Assistant Surgeon. The leave of absence granted him in S. O. 67, August 7, 1884, Department of Arizona, is extended one month. S. O. 204, A. G. O., August 30, 1884.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending September 6, 1884:*

RIXEY, P. M., Passed Assistant Surgeon. Relieved from special duty at Washington, D. C., September 8th, and ordered to the Lancaster, European squadron.

OBELLY, A. S., Surgeon. Relieved from the Richmond, August 30th, and to wait orders.

DICKSON, S. H., Passed Assistant Surgeon. Relieved from Asiatic squadron, July 29th. On sick leave, August 30, 1884.

Society Meetings for the Coming Week:

MONDAY, September 15th: Medico-Chirurgical Society of German Physicians.

TUESDAY, September 16th: Medical Society of the County of Kings, N. Y.; Ogdensburg, N. Y., Medical Association; New York Academy of Medicine (Section in Theory and Practice of Medicine).

WEDNESDAY, September 17th: Medical Society of the County of Allegany, N. Y.; Northwestern Medical and Surgical Society of New York (private); New Jersey Academy of Medicine (Newark).

OBITUARY NOTES.

Dr. Robert Empie Rogers, of Philadelphia, died on Saturday last, at the age of seventy. He was born in Baltimore in 1814, and was graduated from the Medical Department of the University of Pennsylvania in 1836. For eight years he was Professor of Chemistry in the University of Pennsylvania, and on the death of his brother, J. B. Rogers, then Professor of Chemistry in the Medical Department of the University of Pennsylvania, he was appointed to that chair. In 1877 he resigned, and accepted the chair of Chemistry in Jefferson Medical College, which position he occupied until quite recently. He was a man of much note as a teacher and a lecturer, and contributed many valuable papers to scientific literature. He assisted his brother in the preparation of his edition of "Turner's Chemistry," and in 1855 he edited the American edition of "Lehman's Physiological Chemistry."

Dr. R. J. Farquharson, of Des Moines, Iowa, died on Monday last. He was formerly an Assistant Surgeon in the United States Navy, and at the time of his death he was secretary of the Iowa State Board of Health.

Dr. Riggan Buckler, of Baltimore, a well-known and highly respected practitioner of that city, died at Narragansett Pier, R. I., on Sunday, August 31st. Dr. Buckler was a native of Baltimore, and took his medical degree at the School of Medicine of the University of Maryland, having received his academical education at Harvard. He was the surgeon-general of the State of Maryland during the administrations of Governor Swann and Governor Whyte.

Proceedings of Societies.

BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

The fifty-fourth annual meeting was held in Montreal, August 27 to 30 and September 1 and 2, 1884. The President, the Right Honorable Lord Rayleigh, in the chair. As the proceedings had for the most part no bearing upon medicine, our summary will be brief.

The Co-ordinating Centers of Kronecker.—Dr. T. WESLEY MILLS, of Montreal, read a paper on this subject, and said that the center was situated at about the junction of the upper with the lower two thirds of the heart, and toward a branch of the left coronary artery. When this was excited by an electric current or pierced with a needle, the regular beat of the ventricles ceased and a fibrillar contraction took its place, from which, in the dog, there was no recovery. It lasted generally at least five minutes, if the blood be kept oxidized; at the same time the auricles maintained the usual beat. The center was not a motor center nor an inhibitory center, but a co-ordinating center.

Its existence explained sudden death from certain forms of heart disease, from small pricks to the heart, from typhoid fever in certain cases, and death from chloroform. It also showed how dangerous it would be to apply an electric current to the heart to resuscitate one from impending death from chloroform or other such poisoning.

The anatomical relations of this center were being further investigated by its discoverer.

Dr. Mills also gave a demonstration of the center upon a dog. The animal was narcotized with morphine and placed under the influence of curari. Artificial respiration was main-

tained, the chest was opened, and the pericardium was opened and stretched back.

After a few attempts a needle was thrust through the center and the phenomenon appeared and lasted eight minutes, artificial respiration being maintained all the time. Stimulation of the vagus was seen to have no influence over it.

The Value of Nerve-Supply in the Determination of Muscular Anomalies.—Professor D. J. CUNNINGHAM, of Dublin, read a paper on this subject. He spoke of the musculus sternalis as a new muscle in man, which had no counterpart among animals. It was, according to his experience, found more frequently in females than in males; while Professor Shepard, of McGill College, had, he learned, had three cases, all in males.

Professor MOSELEY said that this subject of the anomalies of muscles had a very important function in solving many of the riddles of the evolutionary theory.

Professor STRUTHERS said that, while it was not at all impossible that new muscles were starting up within us, it was also possible that the muscles might have existed before, and not been discovered, as our predecessors did not examine things so closely as did the modern investigators in muscular anomalies.

Professor G. E. DOBSON regarded this muscle as the rudimentary vestige of a muscle found in all the lower animals, by the use of which they were enabled to draw in their heads and fore-legs when they erected their spines.

Professor MILNES MARSHALL said this muscle seemed to appear accidentally. To his mind it was not a little humiliating that it was impossible to decide whether this was a new muscle or the last vestiges of a rudimentary muscle, as held by two such authorities as Professor Dobson and Professor Cunningham.

Dr. SHEPHERD, of Montreal, had often observed this muscle, and regarded it as rudimentary in its nature.

The Growth of Children.—Dr. MINOT read a paper on this subject. He remarked that previous methods of calculating growth were incorrect. In order to ascertain correctly this value, the percentage rate must be calculated—that is to say, for any given period, the increase, calculated in percentage of the weight at the beginning of that period, and, by comparing the percentages of successive periods with one another, we get the true succession of changes in the rate.

This brings out more clearly than the study of the absolute increments has hitherto done certain irregularities. These were:

First. At seven or eight years.

Secondly. At ten or eleven years, being later for boys than for girls.

The rate thus determined also showed that the rate of growth, roughly speaking, diminished from birth onward, thus pointing to the conclusion that there was but one phase of life, that of steady decline, and that the period of increasing power was only apparent, being in reality the concealment of a steady decline. This was also proved by elaborate statistics obtained by observations upon animals.

The broad result of these studies, which were based upon elaborate statistics of many thousand measurements, was that the new individual, from the moment of its creation until its final dissolution, underwent a series of progressive changes which we designated as senescence. Senescence was, then, a fundamental phenomenon in life, which the author hoped to investigate by further and much more extensive experiments.

Numerous statistical tables were laid before the section, which had furnished the basis of the views here advanced.

Dr. D. E. Salmon's Tube for the Cultivation of Micro-organisms was exhibited and commented upon by Dr. HIRROCK.

He referred to the advantages of a solid substratum over a liquid medium in the culture of the bacteria. Dr. Koch had commended it highly, but he had employed liquid media in the culture of tubercle and common bacilli, and said that these flourished best in liquids sufficiently supplied with nutriment.

The life-history of such bacteria as live in fluids could never be traced completely without resorting to liquid cultures approximating their natural habitat in physical and chemical properties. The swarming stage of bacteria and the peculiarity of many species to collect in a membrane of the surface of liquids at a certain period of their life could not be properly exhibited upon a layer of gelatin or blood serum.

Any apparatus was desirable which would simplify the technique and reduce to a minimum the sources of error connected with the study of microscopic fungi in liquid media. Such had Dr. Salmon's tube proved to be.

The culture tube consists of a test-tube-like body or reservoir of rather heavy glass, four to five inches long, and three quarters of an inch in diameter. Over the top of this is fitted a second hollow piece, which might be called a cap. The internal surface of the cap is ground so as to fit snugly over the ground external surface of the upper end of the reservoir, thus forming a ground-joint union. This cap, about two inches and a half long, abruptly contracts near its middle into a narrow tube, with internal diameter of about three eighths of an inch. The third piece, which might be called the ventilating tube, is shaped like an inverted U, one limb being about three inches long and one inch and a half longer than the limb which fits by its ground joint over the narrow tube of the cap. The longer, free limb of the ventilating tube contains a plug of glass wool from one inch and a half to two inches long. The limbs of the ventilating tube are about one inch apart.

The culture liquid is introduced by removing the cap, which brings with it the ventilating tube. It is sterilized in the tube. The liquid is inoculated by removing the ventilating tube only. To prevent the ground joints from sticking too firmly, a little sublimated vaseline is introduced between the surfaces of the joint.

The pipette, used to introduce a drop of fluid containing bacteria, consists of an ordinary glass tube, about one fourth of an inch in diameter and two to three inches long, one end of which is drawn out into a very fine, almost capillary, tube, long enough to reach the bottom of the reservoir. A plug of glass wool occupies the other end, which is closed by a rubber bulb.

The culture fluid is thus inoculated:

The pipette is sterilized by flaming every portion of it nearly to the rubber bulb, subjecting it to a temperature of about 150° C., or, better, bringing it to a dull-red heat, taking care not to melt the capillary tube. It is hung, rubber bulb up, to prevent contact of its capillary end with anything while cooling. When sufficiently cool, the capillary portion is again drawn through the flame to destroy any particles that may have become attached meanwhile. The ventilator of the culture tube containing the bacteria to be sown is removed, and the narrow end of the cap flamed, the rubber bulb slightly compressed, and the pipette introduced, a few drops drawn up, the pipette slowly withdrawn, the cap flamed again, and the ventilator replaced. The cap of the fresh tube is now flamed, after removing the ventilator, the pipette introduced, a drop allowed to fall into the culture liquid, the pipette removed, the narrow tube of the cap again flamed, and the ventilator replaced.

The success of the work depends largely on the care and skill of the operator. The personal equation is as important in this as in other operations.

The form of the receiver might be variously modified. A flask-shaped could be used for cultures that require abundant

air. The tube-shape, however, was usually preferable. It enabled the nature of the opacity in the liquid to be readily determined, while the earliest traces of a membrane or a deposit were more readily detected than with a broad body and flat bottom. The macroscopic appearance of these features would often enable the operator to gauge the purity of the liquid.

The culture tube is a simple and neat apparatus, easily fitted, sterilized, and inoculated. It dispenses with the troublesome and dangerous expedients of disturbing cotton plugs and of tying down various air-filtering materials. It is easily cleansed, and may be used many times over. It does not readily break, has no sharp nor jagged edges, is compact, and occupies but little space in a thermostat, and there is practically no chance of contamination through the air during the process of inoculation. He had not yet seen an impure culture derived from a pure one during his experience in using these tubes. Careful investigators, among whom may be instanced Brefeld, agree that in a room properly managed a short exposure to the air is not dangerous. The utensils used, upon which particles are continually being deposited, were the chief sources of contamination.

Methods of cultivating Micro-organisms was the title of a paper by Dr. GEORGE M. STERNBERG, Washington, D. C. The schizomycetes, or bacteria, in their morphology, growth, and reproduction, presented the simplest possible conditions for the study of fundamental biological problems.

They offered special advantages for such studies because of their rapid multiplication and the facility with which pure cultures might be maintained.

The very considerable additions to our knowledge of these minute plants, which have been made during recent years by the labors of Pasteur, of Koch, and of others engaged in this field of scientific research, were largely due to improvements in technique relating to the recognition—by the use of staining reagents—and cultivation of the micro-organisms in question.

The method perfected by the writer, and described by him in a paper read at the Cincinnati meeting of the American Association for the Advancement of Science in 1881, possessed especial advantages for the cultivation of micro-organisms in fluid matter.

These advantages briefly stated were as follows:

The small flasks employed were made in the laboratory from glass tubing very expeditiously and at small expense. Each flask contained a sufficient amount of nutrient fluid and of oxygen to secure the vigorous and abundant development of any aërotic micro-organism introduced as seed. (The bacilli readily formed spores in these little flasks.)

When properly sterilized the inclosed culture fluid remained unchanged indefinitely, and the little flasks, ready for use at a moment's notice, might be packed away in drawers or boxes for years if desired, and could be conveniently transported from place to place.

The inoculation of one flask with micro-organisms contained in another, or with a drop of blood from the veins of a living animal, was effected expeditiously and with perfect security from contamination by atmospheric germs.

Small amounts of fluid might at any time be withdrawn from one of these flasks for microscopic examination without the slightest danger of introducing foreign organisms and thus destroying the purity of the culture.

Finally, these little flasks took the place of a syringe when an inoculation experiment was to be performed, the contents being forced beneath the skin or into one of the cavities of a living animal by applying heat to the bulb, thus causing the inclosed air to expand, and forcing the fluid contents through the capillary neck of the flask.

The Continuity of Protoplasm through Perforations in the Cellulose Walls of Plant-cells.—Dr. LOUIS ELSBERG, of New York, read a paper and showed specimens. He illustrated his views by reference to the structure of hyaline cartilage. Formerly cartilage was believed to consist of a homogeneous non-living basis-substance, in which were imbedded, at various distances apart, isolated living cartilage corpuscles, the so-called cartilage-cells. Now cartilage was known to be a filigree of living matter, in the meshes of which lumps of basis substance were imbedded.

Celloidine as an Imbedding Mass.—Professor William Libbey, Jr., read a paper with this title, in which he stated that celloidine was a pure form of pyroxiline, manufactured by a patent process in Germany, and used largely in photography in the place of collodion, but could be used for imbedding purposes in histology. It was prepared by dissolving one ounce of celloidine in ether (noting quantity used), and when dissolved an equal quantity of alcohol was added. Two solutions were needed, one very thin and the other decidedly thick.

The specimens were (after being properly hardened) to be soaked in absolute alcohol for an hour or two, then for the same period in strong ether, then for six hours in the thin solution, and the same time in the thick solution.

A good cork must also be soaked in some absolute alcohol, and, when ready to imbed, this cork was taken and a small quantity of the thick solution placed on one end; it was allowed to dry until it was well stiffened, then the specimen, with so much of the thick solution as would stay on it, was placed on this and allowed to dry partially, when another coating was placed over the specimen from the same solution, and this ought to be continued until the specimen had a sufficient quantity around it to hold it firmly; then it was allowed to dry, and when stiff was placed in 80 per cent. alcohol for at least twelve hours before cutting.

The sections were best cut in alcohol and preserved in it until wanted.

They could be stained as they were in the mass (as it did not stain readily) and then mounted, but they must be cleared up in oil of cedar or orangeum, etc., as the oil of cloves, usually used, dissolved the mass.

Where it was important to keep parts of the section in their relative positions, the foregoing method of procedure was best, but where it was of no importance the mass could be removed perfectly by soaking first in absolute alcohol and then in ether for a few moments, and then putting them in alcohol again or in a mixture of equal parts of alcohol, glycerine, and water, where they would keep indefinitely.

NEW YORK OBSTETRICAL SOCIETY.

Meeting of May 6, 1884.

The President, Dr. W. M. POLK, in the chair.

Papilloma of the Vagina.—Dr. W. M. CHAMBERLAIN presented a specimen, removed from the vagina of a woman about fifty-five years of age. He had seen the patient in consultation, and the attending physician had given the following account of the case, as observed through a period of several months:

"The patient was conscious of the presence of a tumor which impeded urination and yielded a watery and bloody discharge at intervals. A surgeon of some repute had seen her and pronounced the case to be one of carcinoma extending downward from the uterus and involving the posterior as well as the anterior vaginal wall to such an extent as to preclude all question of removal, and had advised that treatment should be limited to

securing tolerable comfort to the patient, the suppression of hemorrhage, disinfection, and the use of morphine as an anodyne."

A considerable hæmorrhage had occurred the day before Dr. Chamberlain was called to see her, and a mass of spongy tissue had protruded. The woman was extremely exsanguinated and hectic.

The vulva was occupied by a mass of large vegetations, and the vagina so crowded with the same that the finger was with difficulty carried through the center of the mass up to the uterus, which could not be made out as much enlarged or very firmly fixed. Examination was followed by such bleeding as to require a tampon, and to inspire a doubt as to whether any more radical procedure could be employed. On the following day, however, the tampon was removed, and the protruding part drawn down was seen to have a broad base of attachment to the superior wall of the vagina. This base was constricted by a strong elastic ligature, and a mass as large as a medium-sized lemon was cut off with the scissors. A larger amount of tissue was quickly scraped away with the finger-nails, and a tampon of glycerole of alum was rapidly inserted. After a few days the operation was repeated with the large sharp curette, and a saturated solution of chloride of zinc upon cotton was applied to the base. Thus the vagina was gradually freed until a speculum could be used. The os uteri was found small, and, though it was more or less covered with vegetations, the disease seemed to be limited to the surface. The anterior vaginal fornix still contained some of the growth, but the patient was so much improved and relieved that she was able to go to her home, out of town. Defecation and urination, which had been very difficult and painful, had become natural, and the discharge was almost suppressed.

The tumor had been carefully examined by Dr. F. Ferguson, who had made the following report:

"The tumor is composed of a fibrous stroma with abundant smooth muscle-cells, supporting epithelial cells distinctly nucleated and of large size. The arrangement of the stroma is not such as to classify the tumor readily, but it is closely allied to the variety of epithelial tumors called '*papilloma*.' From the enormous size of the papillæ of which the tumor is composed, and the bountiful supply of epithelial cells, which are in a state of active proliferation, the prognosis is rather unfavorable. If the tumor be completely removed, its tendency to return will not be so marked as that of carcinoma or sarcoma."

HENRY J. GARRIGUES, M. D.,

B. F. DAWSON, M. D.,

FRANK P. FOSTER, M. D., *ex officio*,
Committee on Publication.

Meeting of May 20, 1884.

The President, Dr. W. M. POLK, in the chair.

Rupture of an Ovarian Cyst with Colloid Contents.—Dr. P. F. MUNDE presented a specimen, and gave the following history: About two months ago a patient entered his ward at Mt. Sinai Hospital with evidence of an abdominal enlargement which she first noticed last August, at which time she fell upon the right side of the abdomen and experienced sharp pain. The abdominal enlargement was diffuse, and had been steadily increasing since the accident. Her general health, although fair, was not so good as it had been. Dr. Mundé was able by a superficial examination to determine that the abdominal enlargement was not due to fluid contained within well-defined cyst-walls, and was inclined to the opinion that there had been rupture of an ovarian cyst. The patient was afterward put under chloroform, and a very thorough examination was made in the

presence of a number of gentlemen. The abdominal wall projected on either side; there was fluctuation with dullness, not changed by altering the position of the patient. It was decided to perform aspiration, but nothing was withdrawn. No bad results followed this procedure. A diagnosis was now made of rupture of a multilocular cyst with colloid contents, which had produced general chronic peritonitis and deterioration of the patient's health. In addition there was on the left side a tumor, of the size of a cocoon, which was immovable and gave indistinct fluctuation. This was supposed to be an intra-ligamentous cyst of the left ovary. Although the diagnosis was uncertain, the patient was told that the sooner an exploratory incision was made the better. After a few days' consideration she decided, inasmuch as her health was fairly good, not to have anything done. Three weeks later she returned, suffering from a great deal more pain, and in much worse general condition. The temperature had been normal, but was now 103° F. It sank, however, under large doses of quinine. On opening the peritoneal cavity, very thick colloid material was encountered, which came away in strings. The patient was turned on the side, and as much of the colloid material as possible was washed out by irrigation with corrosive-sublimate solution, 1 to 2,000. The pedicle of the ruptured cyst was tied and dropped in the usual way. All of the peritoneum below the umbilicus was intensely inflamed, being of a purple-red color; it was thickened, and covered by an exudation, particularly on the right side. Above the umbilicus the color was normal, although there was no apparent reason why the inflammation had not extended to that region. The tumor on the left side was found to be an intra-ligamentous cyst which he was in doubt about how to treat. At the suggestion of Dr. Polk he tried enucleation, which was easily accomplished, but the cyst was so fragile that on slight manipulation it ruptured. Its contents were highly fetid pus. This accident, however, had nothing to do with the death of the patient, which took place from shock about twenty-two hours after the operation. It was thought likely that the patient would have recovered had she submitted to an operation when it was first advised. The case was interesting from a diagnostic point of view, from the fact that the patient had gone as long as nine months since the rupture of the cyst had taken place, and, further, from the peculiarropy character of the material in the peritoneal cavity. The colloid matter found in the peritoneal cavity weighed thirteen pounds.

Supra-vaginal Amputation of the Uterus for Uterine Fibroid.—Dr. MUNDÉ related a second case and presented the specimen. Last autumn a physician from Harlem brought a patient to his office who was found to be suffering from a sub-peritoneal uterine fibroid. The uterus was of about its size at the sixth month of pregnancy. The chief symptom was abdominal pain. Menorrhagia was not very severe. Dr. Mundé advised against operative interference; ergot was given to control hæmorrhage, and for a time was effectual. In April a letter was received, stating that the patient suffered so much from pain that she was obliged to resort to morphine, and desired an operation. Examination showed little change in the size of the tumor; it reached to the umbilicus, and was movable and fairly hard. There seemed to be no special demand for the operation excepting severe pain. Last Friday an incision was made, reaching from the umbilicus to the symphysis pubis. The tumor was non-adherent, and was lifted out without any difficulty. The left broad ligament was tied in two places, and the ovary and tube were tied off. The right ovary was adherent too low down to admit of this treatment, and he was obliged to ligate above it, leaving the ovary and tube to be removed subsequently. This was done by ligatures, and the tube, which could not be included in the ligatures, was seared with Pague-

lin's cautery. It was intended to apply an elastic ligature around the pedicle and leave it in the abdominal cavity, but the only one at hand proved to be rotten and worthless. The pedicle was then transfixed in an oblique direction by two long pins, and an ovariectomy clamp was applied beneath. A hysterectomy clamp could not be obtained. The clamp used failed to make sufficient compression. He then applied the Maisonneuve *constrictor* beneath the clamp. It had to be applied so far down that it was impossible afterward to sew the peritoneum at all points of the circle below the wire. When the uterus was removed most of the upper part was found to be involved in the tumor. The pedicle was secured in the lower angle of the abdominal wound. On loosening the *constrictor*, with intent to remove it, blood spurted, although the large arteries in the stump were separately ligated, and it was again tightened and allowed to remain. The stump was cauterized with a saturated solution of chloride of zinc, and the wound was dusted with iodoform. No drainage-tube was used. The patient rallied well. The temperature on one occasion went up to 102° F., when the ice-coil was put on, and it came down and had not again risen above 100°. There had not been a single bad symptom during convalescence. The pedicle was now ready to fall off. There had been considerable suppuration after the fifth day, but none of the fluid entered the peritoneal cavity.

Labor at the Sixth Month complicated by a Large Cervical Fibroid.—The third case, also narrated by Dr. MUNDÉ, was that of a patient who came to the hospital two weeks ago, with a history of bleeding during her last labor, due to placenta previa. Examination revealed two tumors, a soft one extending from five inches above the pubes to the diaphragm, and a harder one extending down into the pelvis. The lower tumor could be felt through the vagina. The patient said she could not be pregnant, for she had been bleeding for several months. She was very much exsanguinated. Dr. Mundé diagnosed, in addition to the tumor, pregnancy of about the sixth month. The tumor was apparently connected with the anterior cervical wall, and filled the pelvic cavity. One of two courses might be pursued: First, to wait until term and perform the Cæsarean operation; or, second, to enucleate the tumor through the vagina, which might be done at once or at term. He thought it would not be so favorable for the patient to wait until term, because the tumor in the mean time might become considerably larger. Hence he decided to enucleate the tumor by the vagina, and fixed the day for the operation. On the morning of the appointed day the patient began to lose blood and to suffer pain, and, when he reached her, he found labor had come on, the cord and a hand protruding through the cervix. Pain was quieted by morphine, and a few hours later he proceeded to remove the tumor by enucleation with the fingers and Thomas's serrated spoon, having first made an incision five or six inches long into the capsule. No difficulty was experienced in enucleating the growth until the upper attachments were reached. It was found to weigh three pounds, and to measure eight inches in length by twenty inches and a half in circumference. A fetus of about the sixth month was then extracted without any trouble. The patient lost comparatively little blood, but the shock was quite severe. She rallied well, however, under hypodermics of whisky. The cavity of the tumor was stuffed with iodoformed gauze, which was removed on the second day. The temperature on that day went up to 102° F., but fell under the ice-coil and quinine, and to-day was normal. The patient was doing well, and doubtless would go on to perfect recovery. He had been able to find but one case on record, that of Professor Schröder, in which the patient was permitted to go on to term. In that case the tumor was then removed by vaginal enucleation, and both child and mother survived.

Dr. W. T. Lusk said he was rather surprised when he witnessed the operation, in the first case related by Dr. Mundé, to observe that the ovaries and tubes were not carried up with the tumor as in a case of pregnancy.

Dr. J. B. HUNTER thought the explanation probably lay in the fact that the ovaries and tubes had become bound down below the uterine fibroid. He referred to a case in which he removed the uterus at the cervix, and hæmorrhage was controlled perfectly by the elastic ligature.

The PRESIDENT remarked that the question how to get the peritoneum in contact with the stump below the ligature when there was great tension was an important one, and asked the gentlemen if any of them could give suggestions on that point.

Dr. HUNTER suggested transfixion with a strong silk ligature, and then tying the stump and dropping it.

Dr. MUNDÉ had seen two cases in which the pedicle was tied and dropped, and the patients died.

Dr. HUNTER remarked that his patients so treated had recovered. In one the cervix sloughed away after the operation.

The PRESIDENT remarked that in a case in which he had performed hysterectomy the cervix also sloughed away, although the patient made a good recovery.

With regard to the third case, Dr. MUNDÉ replied to a question by Dr. Hanks that the fibroid had probably been one of the fundus which had worked its way down to the cervix.

Dr. Lusk called attention to the fact that about two years ago Dr. Kessler, by invitation, presented a specimen to the society removed from a patient in whose case the result of the operation was different. Premature labor took place at about the seventh month, and, it being impossible to remove the placenta, she died of septicæmia. The tumor filled the entire lower uterine segment. In the light of the case reported this evening by Dr. MUNDÉ, it would have been well had an attempt been made to remove the tumor in the same manner. Dr. Lusk had requested Dr. Kessler to present the specimen for the purpose of drawing out an opinion as to the propriety of attempting enucleation, and Dr. Thomas and others then thought it would have been folly to attempt it. He mentioned this as an illustration of the rapid strides that had been made in uterine and abdominal surgery.

Dr. H. T. HANKS said he reported a case to the society seven or eight years ago, in which Dr. Thomas saw the patient and performed the Cesarean operation. The tumor was much smaller than the one presented by Dr. MUNDÉ, but it was within the cervix and prevented the birth of the child in the natural way. He believed that, at the meeting Dr. Lusk referred to, he asked Dr. Thomas whether, since he had devised his spoon-saw, he would not enucleate the tumor in such a case, instead of performing the Cesarean operation, and he replied that he certainly would.

Dr. MUNDÉ added that enucleation was much easier to perform in this case than it would have been in a non-pregnant woman.

Dr. HANKS reported, with regard to the case of puncture of the gravid uterus in the performance of ovariectomy, followed by miscarriage after the patient's convalescence and discharge from the hospital, that he had lately delivered the patient of a well-developed child at term.

Malignant (?) Tumor of the Pelvis.—Dr. HUNTER reported the case of a patient who came to him about two months ago with a pelvic tumor, of about the size of a pigeon's egg, situated in the region of the left ovary. About two weeks ago she was advised to enter the hospital and have the tumor removed. He at first took it to be malignant disease of the ovary. The uterus was normal and the menstrual function was not interfered with. At a careful examination, while the patient was

under the influence of ether, he felt pretty certain that the growth could not be removed, and yet he thought the patient was entitled to the benefit of the chance, for she was suffering much pain, was becoming emaciated, and the tumor was growing. On opening the abdomen, he found a tumor, of about the size of an orange, attached to the pelvic brim, and any attempt at its removal caused so much hæmorrhage that the operation was abandoned and the wound closed. The patient had done well since. He believed the case to be one of malignant growth from the bone.

Etherization by the Rectum.—Dr. HUNTER gave his experience with regard to this method of producing anesthesia. Since he first saw a notice of it by Mollière, in "*Lyon médical*," he had made use of it in as many as twenty-four or twenty-five cases, and had become quite convinced of its practicability. Dr. Weir had reported a death, in an infant eight months old, from diarrhœa, and he would not advise the production of anesthesia in this manner in such young subjects. The apparatus which he used consisted of a small glass jar, with a perforated rubber cork, through which he introduced the tube of a Davidson syringe. The bowels were emptied by an enema a few hours before the operation. The jar was placed in water of a temperature of 110° to 115° F., and soon the ether which it contained began to boil, and the vapor passed up the rubber tube into the rectum. Patients usually came under the influence of the anæsthetic in from five to eight minutes; some required ten minutes, and one was unconscious within three minutes. In but one case had it failed. At the end of twenty minutes the patient was unaffected, an ounce and a half of ether having been consumed. In one case the patient was kept under the influence of the ether administered in this manner for thirty minutes, and in another for twenty-seven minutes, neither of them experiencing any bad after-effect. In no case had any bad result followed, except that in one, in which ether was given by the rectum for five or six minutes and then the inhaler substituted, diarrhœal passages, with blood, occurred the next day, and continued for forty-eight hours, being apparently due to a hyperæmia of the rectum. His habit was to bring the patient nearly or quite under the influence of the anæsthetic administered by the rectum, and then substitute the use of Allis's inhaler. Given in this manner, only one half as much ether was usually consumed as when given altogether by the inhaler. The patient came from under the influence of the ether more quickly and felt less nausea. The sensation of dyspnoea and the stage of excitement were avoided. There was much less liability to bronchitis. He had also administered nitrous oxide by the rectum, but was not yet prepared to report upon it. He thought that in the cases reported, in which intestinal irritation followed the administration of ether by the rectum, the vapors were, perhaps, allowed to condense in the tube, and thus liquid ether was accidentally conducted into the rectum.

The PRESIDENT inquired whether the advantages alleged for this method over the use of Allis's inhaler were not also possessed by Clover's method, which was attended by but little vomiting, required but little ether, and caused comparatively little struggling, although some patients did suffer a good deal from a sense of suffocation. He had given ether by the rectum, and recognized its advantages in bringing on anæsthesia, but he thought, with Dr. Hunter, that in long operations the inhaler should afterward be substituted.

Dr. HUNTER said Clover's apparatus was cumbersome and costly.

Dr. MUNDÉ had used the Clover apparatus in numerous operations, and had been very well satisfied with it. But a very small amount of ether was consumed, and the patient came rapidly under its influence and experienced little feeling of suffo-

cation; the nausea following its use was not great, the patient came from under the influence rapidly, and, should cyanosis develop, it could easily be overcome by admitting more air. He had heard of one or two other deaths from the administration of ether by the rectum, besides the case recorded by Dr. Weir.

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Reports on the Progress of Medicine.

SURGERY.

By CHARLES B. KELSEY, M. D.,

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The Treatment of Scrofulous Cervical Glands by Excision.—Dr. J. Fagan has often advocated the excision of scrofulous cervical glands as the most radical and effectual method of treatment, and he now ("Dublin Jour. of Med. Sci.," June, 1884) relates three or four cases tending to show the good results of this method of treatment. He calls attention to a few points connected with the operation and the after-treatment which he considers worthy of notice: 1. The incision over the glands should not be made too free, but all the underlying structures should be freely divided from angle to angle of the skin-wound. When the gland is freely exposed, it should be seized with a tumor-hook and steadily, but gently, drawn through the wound. When all the affected glands are removed, any ragged shreds of cellular tissue that remain should be clipped away with the scissors, all bleeding points should be secured, and the wound well swabbed out with a strong solution of chloride of zinc. 2. Regarding drainage of the wound, he has had good results both with and without it; but, on the whole, thinks it better and safer to use either horse-hair or fine tubes. This is especially necessary where the wound is large and where there has been oozing of blood or difficulty in enucleating the glands. 3. The finest silver wire should be used in suturing the wound. It should not be passed too deep through the lips of the wound, which should be most accurately adjusted, and the sutures should be removed not later than the third day, and sooner if the slightest inflammatory blush should appear at their points of exit from the skin. The marks that follow the suppurating tracks of the sutures are far more disfiguring than the scar of the incision. 4. The most effectual way of maintaining the parts at rest during the healing of the wound is by means of a night-cap, with a pair of strings attached at either side, which are brought down and fastened in front by means of a thoracic binder, and drawn sufficiently tight to bring the head well forward upon the chest. Such a form of restraint is especially necessary in the case of children. 5. Should inflammation attack the wound, the tension should be at once relieved by removing some, if not all, of the sutures; and, if there has been no drainage, a probe should be passed into the most dependent angle of the wound and a small tube inserted.

The author holds firmly to the opinion that when disease is limited within a well-defined area, and the tissue involved is steadily, however slowly, deteriorating, its total extirpation is the only rational and effectual mode of dealing with it; and this principle is, he maintains, equally applicable whether the structure involved be gland, bone, or joint, provided anatomical considerations allow of such operative interference.

The Local Treatment of Laryngeal Tuberculosis.—Dr.

Gouguenheim ("Bull. gén. de théor.," May 30, 1884) lays down some general rules for the local treatment of tuberculosis of the larynx. He divides the treatment into: 1. The use of medicated solutions. 2. That of solid applications, or crayons. 3. That of the galvanic cautery. 4. Surgical operations—partial avulsion, tracheotomy, or extirpation of the larynx. The use of crayons he does not approve of, believing it to be more defective, less convenient, and more difficult to support than the use of fluid applications. He makes an exception of iodoform, but prefers to use even that on a small sponge with a holder. He gives the following general rules for the use of the galvanic cautery: 1. When dysphagia is due to increase in the size of the epiglottis, the weekly application of the cautery at a few points brings about a rapid and lasting benefit. 2. When dysphagia is due to swelling of the folds and of the arytenoid region, cauterization is more painful than in the former case, and is not followed by the same good results. 3. When the vestibule and superior vocal cords are involved, the cautery is well borne, but the effects are not so good as in the first case. 4. When the larynx is the seat of numerous vegetations, cauterization is absolutely indicated, and should always be preferred to avulsion. 5. When the inferior vocal cords are thickened and covered with vegetations, they may be cauterized with advantage, but only if they are movable and if there is no stenosis. 6. When the vocal cords are approximated and can not be separated, and stenosis exists either by spasm of the adductors or paralysis of the dilators, there is danger in carrying the caustics into the interior of the larynx; but this danger is less than that which follows fluid applications. As to the avulsion of vegetations, he believes it to be bad practice. It is painful, and creates wounds which may serve as points of inoculation. He much prefers the galvanic cautery. He enumerates the indications for tracheotomy as follows: 1. With a tuberculous patient, where the lesions in the lungs are not extensive, the general state is satisfactory, and the temperature nearly normal, when frequent attacks of suffocation are caused by the laryngeal stenosis. 2. The existence of extensive pulmonary disease does not contraindicate the operation if the temperature is normal and the digestive functions are undisturbed.

Intestinal Obstruction following Hernia.—Dr. Frederick Treves ("Lancet," June 7, 1884) gives a very interesting study of the forms of intestinal obstruction that may follow after hernia. In a certain proportion of all cases of complicated hernia—in a proportion by no means insignificant—certain changes are induced that may lead in the future to serious and fatal intestinal obstruction. The forms of occlusion of the bowel that may arise under these circumstances are of various kinds, and the symptoms that they induce do not appear until some time after the subsidence of the trouble in the hernia. In such cases weeks, or even years, may elapse between the reduction of a strangulated hernia or the relief of an obstructed or inflamed rupture and the appearance of symptoms of internal obstruction, although the pathology of such cases will show that these tardy symptoms depend upon morbid changes set up by the long-lapsed mischief in the hernia. A strangulated hernia that has been associated with very definite symptoms has been reduced by taxis or by operation; the reduction is complete, and the gut has been returned into the abdominal cavity entirely free from all constriction. Yet the intestinal symptoms persist, though possibly in a modified form, and the persistence may lead to death. The usual morbid conditions found in such cases are the following:

In the first place, the reduced gut may lie in the abdominal cavity simply *hors de combat*, so damaged that its coats are paralyzed, and it is quite inert. It may not be gangrenous, though it may be on the verge of death. It is an irritant to the

peritoneal nerves, it interrupts peristalsis, and, as an obstructing agent, acts as a piece of rubber tubing would if introduced in the line of the living intestine. The symptoms are often in excess of what would be expected from the condition of the gut. Perhaps laparotomy is performed and nothing abnormal is found save the listless, dead, or dying loop of gut adrift in the abdomen.

In a second class of cases the persistence of the main symptoms depends upon the development of acute peritonitis. Under such circumstances the constipation persists, the vomiting continues—although it may be less frequent and less severe—the pain increases and is more constant and diffused, there is general and extreme tenderness, all peristaltic movements cease, the paralyzed bowel is distended and meteorism appears, the temperature usually rises, and the pulse becomes more rapid and more thready.

In a third class of cases the severer symptoms that may continue after the reduction depend upon acute enteritis. This condition is usually mistaken for peritonitis with diarrhoea, or for an abiding obstruction with diarrhoeic irritation of the gut below it. In this complication, however, the abdomen is shrunken, not distended; there is comparatively little tenderness, the pain is paroxysmal rather than constant, vigorous peristaltic movements are evident, the vomiting is not severe, and there is free and often profuse purging. The pulse is usually not so thready as in peritonitis, although the temperature may be about the same.

Besides these anomalous cases there are certain definite and mechanical forms of intestinal obstruction which result from strangulated hernia. The first of these is an organic stricture of the intestine. In one form it is purely cicatricial, and is due to the contraction subsequent to the healing of a loss of substance in the mucous coat. In another form the gut is puckered and greatly narrowed by a well-localized contracting peritonitis. The former seems to appear only after a strangulated hernia; the latter may follow upon a hernia which has been simply incarcerated or inflamed. Examples of this cicatricial stricture have been met with in patients as young as twenty-six and as old as sixty, and appear to be as common after inguinal as after femoral hernia. The duration of the strangulation appears to be a factor of no moment. In one case the strangulation had lasted only thirty hours; in another, three days; yet the resulting strictures appeared to be much alike. In both, kelotomy had been performed. In all the recorded cases the patients appear to have recovered well from the hernia, and, after a varying time, during which they were free from intestinal symptoms, to have gradually shown symptoms of stricture of the small intestine. As a rule, these symptoms have appeared within six weeks or two months of the reduction of the hernia. The time, so far as the record goes, varies from twenty-six days to eight months. The symptoms and prognosis in these cases are the same as in simple stricture from other causes.

In another class of cases the herniated loop becomes fixed to the abdominal wall by adhesions after reduction. This condition is comparatively common, and has many times been the cause of fatal obstruction. It may follow strangulation, or upon the reduction of hernias which have simply been inflamed or incarcerated. It is only necessary that the reduced coil should be the seat of a slight amount of localized peritonitis. The adhesion is usually about the hernial orifice, is of limited extent, and involves the summit of the loop that has formed the rupture. Thus the gut becomes sharply bent at the adherent spot and is apt to be occluded at any time by "kinking." Moreover, a peristaltic wave passing along the bowel will be interrupted at the site of the adhesion, the fixed bowel will often be roughly dragged upon, its power of contracting will be seriously in-

paired, and it may not infrequently play the part of a paralyzed segment in the length of the gut. The contents of the bowel are apt to lodge at such a point, and, for this and other reasons, ulceration of the mucous membrane at or just above the seat of adhesion is apt to occur. The cicatrization of such an ulcer leads to stricture.

In another class of cases the two ends of the herniated loop may be fixed together by adhesions. This condition can involve only the small intestine, and is the outcome of some limited peritonitis set up in the parts of the bowel that lay within the constricting neck of the sac. A rigid loop of bowel is thus formed that will probably lie loose in the abdomen. Two varieties of loop may be formed by adhesions. In the kind just noted, the ends of the loop only are adherent and a sort of ring of bowel is formed. In the other the two bars of the loop are adherent in their entire extent, so that if the loop were to be cut across transversely the cut orifices of the gut would look like the openings of a double-barreled gun. Loops of the first-named sort may lead to a certain form of volvulus. In loops of the second sort there is great angular bending, with constant imminent risk that the bend may close the tube.

In another class of cases the adhesions between the reduced loop and the parietes may develop into a band, which, as is well known, may snare and obstruct the gut in many ways; and in still another class a part of the omentum may become adherent to the inflamed peritonæum about the hernial orifice, and an omental cord be formed which subsequently may cause mechanical obstruction.

The enumeration of these varieties of obstruction affords a precise and scientific basis to the statement that has been dimly expressed by authors, to the effect that internal obstruction appears to be unusually frequent in the subjects of rupture. Their frequency, compared with that of hernia, can not be said, however, to be very great.

A New Radical Operation for Cancer of the Rectum.—M. Pollosson ("Lyon méd.," May 18, 1884) recommends a new procedure for the radical cure of cancer of the rectum, which consists, briefly, in the performance of a double operation. The primary operation is merely the formation of an artificial anus and the complete closure of the lower end of the bowel by cutting it across at the sigmoid flexure, invaginating the extremity of the lower end and closing it with sutures. After this operation has been successful, he proposes to extirpate the cancer in the usual way. His idea is that by this method the rectum is rendered passive and inert before the extirpation, and many of the dangers attending the usual operation are thereby avoided. His article is rather a suggestion than a report of actual experience, the latter being confined to doing the first part of the operation in a single case.

Sprains and their Treatment.—M. Marc Sée ("Revue de chir.," June, 1884) goes exhaustively into the question of sprains and their treatment. He defines a sprain as consisting essentially in great distension with partial rupture of the ligaments and articular synovial membranes, causing a sanguineous exudation in the joint and its vicinity. To these lesions may be added, in severe cases, muscular rupture, laceration of tendons, ligaments, and osseous apophyses, rupture of fibrous sheaths, fracture of articular extremities, laceration of the skin, and contusion of subcutaneous tissue. He gives many suggestions as to treatment, and, among other things, lays down the following propositions regarding massage. It may be of great service in recent cases of slight sprain by relieving the pain and swelling. Generally several sittings will be necessary to produce any permanent good results, but it is impossible to determine the number in advance. In the intervals the pain and swelling return to a variable degree.

Massage generally succeeds best in the first hours after the accident. Success is more rare after the sprain has existed some days and when there is a certain degree of inflammation. It demands much patience and time from both surgeon and patient. For this reason it is often left to empirics, who abuse it. It does not always succeed, even in simple cases; it is dangerous in severe cases and those complicated with fracture. After the disappearance of the primitive symptoms of a sprain the disease is not cured. The cicatrization of ruptured parts can not take place till after a considerable time, and requires immobilization of the joint. It is, therefore, imprudent to allow the patient to walk immediately after the treatment by massage. The author himself has great confidence in the treatment by elastic compression, and lays down the general rules for its application.

Cholecystotomy.—Mr. Lawson Tait, in a note on cholecystotomy ("Brit. Med. Jour.," May 3, 1884), concludes that all the possibilities of the operation for gall-stone and distended gall-bladder were exhausted in Marion Sims's original paper; that no advance has been made by any attempt to improve upon what he recommended and performed, and that none is likely to be. He has performed the operation thirteen times, and all the patients have recovered. One old woman died of suffocative catarrh some weeks after the wound was healed, and another patient died of cancer of the liver, which was, in all probability, the cause of the distended gall-bladder, as no calculus was discovered. The remaining eleven patients are in perfect health, and the results are perfect with one exception, which exception, the author says, has taught him a great deal.

Two modifications of the plan proposed and practiced by Sims have been suggested and tried, but they are not based on good reasoning and have not been successful. The first is a proposal made by Sir Spencer Wells to open the gall-bladder, remove the calculi, and close the organ by a continuous suture without attaching it to the abdominal wound. This has been put in practice only once, and the result was fatal. A large quantity of bile was found in the peritonæum, and, though this may not have been the cause of death, it is not a condition likely to contribute toward success. But the arguments against the procedure are much stronger than the want of success in a single case. The gall-bladder is an organ subject to periodic filling and emptying, the latter process being accomplished by the contraction of its muscular walls, which contraction is much more powerful than seems generally to be supposed. It also secretes an abundant quantity of clear albuminous fluid from its mucous surface, and this fluid contains some kind of ferment, if a few rough experiments the author has made are deemed conclusive. Even if no bile enters the gall-bladder it speedily fills with this secretion and expels it; so that, if its duct were occupied by a calculus, and a wound in its base were closed by a continuous suture and not fastened to the abdominal wall, it is difficult to believe that such a wound would remain closed.

It is a matter of extreme difficulty, if not an impossibility, to be quite certain that all the stones are removed in an operation of cholecystotomy. The duct is distended by the passage of a calculus, urged forward by the pressure of the secretion of mucus by the gall-bladder itself. So long as the stone is in the cystic duct, the contents of the distended bladder consist entirely of clear mucus. After the stone has passed the mouth of the liver-duct the bile flows into the gall-bladder, its passage into the duodenum is prevented, it is reabsorbed into the system, and jaundice is produced. The cystic duct in its normal state is much smaller than the common duct, and the agonizing pain of the passage of a gall-stone seems to be limited, in great measure, to this part of its journey, for it is rare, after these severe attacks, that jaundice occurs. Should cholecystotomy be per-

formed while a stone is in the common duct, and the gall-bladder be treated as is recommended by Sir Spencer Wells, it is clear that the pressure required to force the stone into the duodenum would be much greater than that required to tear open the stitched wound in the gall-bladder; extravasation of bile into the peritonæum ever afterward would be inevitable.

Exactly the same argument is to be used with greater force against Langenbuch's proposal to remove the gall-bladder. The proposal is intrinsically absurd, for there can be no reason for removing any bladder simply because it has some stones in it. In five of the author's cases the bladder was suppurating and greatly thickened, but the removal of the stones and drainage of the bladder for a few weeks completely cured this condition. If the gall-bladder were removed at the time when a stone was lodged in the common duct, the bile must all flow, just as in the other case, into the peritonæum. The author understands that Langenbuch's proceeding has been fatal in three out of six cases where it is known to have been tried, and it would have been fatal in three of his own cases had he employed it, for in three of them stones were so situated. In two he got the stones out; in the third the stone is still there. Every drop of bile comes through the fistula and none appears to go through the intestines. The fistula is a mere pin-hole, and he has tried to close it three times, always with the result of causing an agonizing colic which lasts till the bile again forces its way through the fistula. This takes about fifty hours. He proposes to open the abdomen again, about an inch to the inner side of the gall-bladder, and crush the stone *in situ* by means of a padded forceps applied outside the duct.

As a matter of interest, the author has not the slightest evidence to lead him to believe that either quantity or quality of food, or any drugs which were used for the legitimate treatment of these cases, such as morphine, calomel, podophyllin, and rhubarb, have the slightest effect on the quantity or character of the secretion. None of the patients have suffered in any way when even the whole secretion has come through the fistula, in one case for months, save from the inconvenience of the dribbling. In one case the patient has positively gained in weight and greatly improved in health. The stools are almost milk-white, and there is not the slightest evidence of the flatulence and decomposition which are said in the text-books to be the result of biliary fistula.

Miscellany.

Infectious Diseases and Vaccination for Rabies.—"The Medical Times and Gazette" (August 23, 1884) publishes the following version of M. Pasteur's address, delivered at the International Medical Congress at Copenhagen, August 11, 1884:

GENTLEMEN: In addition to the fact that they are meetings at which the most important problems of medicine are subjected to examination, congresses also serve to indicate to posterity the chief directions of progress. Three years ago when the Congress met in London, the microbe theory in its application to the etiology of infectious diseases was still the subject of violent attack. Many who opposed themselves to advanced ideas persisted in maintaining that diseases exist "in us, from us, and by us."

One would imagine that those who hold that these diseases arise spontaneously would in London have shown themselves eager to defend this thesis, but opponents to the doctrine that the principal cause of infectious diseases is an external one did not venture to come forward, and discussion on this question was not even opened. In such an assembly as this, when all are prepared for a new triumph of truth, we see at length a way open for these men to give in to it.

For the rest, all clear-sighted men had foreseen that, as soon as one would be able to show that the spontaneous origin of microscopic life was a chimerical hypothesis, and, on the other hand, that this microscopic life had relations to organic decomposition and fermentation, theories as to the spontaneous origin of disease would cease to exist. In like manner it is from the London Congress that another important advance dates its confirmation, namely, the possibility of attenuating the different viruses, varying their infectivity, and preserving them by means of suitable cultures, and lastly, the application of this discovery to veterinary medicine. To the vaccine microbes of fowl cholera and splenic fever, one has been able to add others; and the animals that are protected against the attacks of fatal infectious diseases are now to be counted by hundreds of thousands. The violent opposition which this innovation has encountered will soon be swept away in the current of new ideas. Is the application of this new advance, then, to be confined in the future to the prevention of the diseases of animals? Besides the fact that one need never despair of a discovery and its fruitfulness, can we say that this question is already solved in its principal points? Splenic fever, for example, is common to animals and man; and we can say for certain that, if it were worth while, nothing would be simpler than to produce in man insusceptibility to this disease. The procedure which is successful in animals would be applicable without modification so to speak. It would simply depend on one's proceeding with an extraordinary degree of caution, such as the life of an ox or a sheep does not require. Instead of vaccinating with vaccine of only the second degree, one could take three or four of variable virulence, till one chose the first, weak enough not to cause the slightest symptom, but which would yet produce insusceptibility to the disease. In the case of human diseases the difficulties lie then, not in the application of the new prophylactic method, but rather in the knowledge of the physiological properties of the virus. To attenuate the virus to the proper degree, it is necessary to control our efforts by experiment; but the experiments which are allowable in animals are criminal when we have to do with man. In relation to the diseases which exclusively affect mankind, this is the chief cause of the difficulties of the investigation. Let me in the mean time remind you that the inquiry, of which we are speaking, dates, so to speak, from yesterday, that it has already been fruitful in results, and that we have a right to expect new advances when we obtain a closer acquaintance with the diseases of animals, especially those which attack both man and beast. It was the desire to penetrate further into this twofold knowledge which induced me to study rabies, in spite of the obscurity in which that disease was enveloped.

It is now four years since the study of rabies was first commenced in my laboratory, and it has been continued without any other interruption than the enforced cessations which depend on the conditions of the inquiry—conditions which are very unfavorable. The incubation of the disease is always of long duration. There are never sufficient facilities to enable one at a given moment to multiply experiments. In spite of these material hindrances, which, however, the French Government, in its care for the great scientific interests involved, has done everything in its power to remove, the experiments which we, my fellow-workers and I, have carried out, have, nevertheless, passed beyond the possibility of numbering them. To-day, gentlemen, I shall only describe the most recent results of our inquiries. Every disease, and especially such a disease as rabies, immediately makes one think of its cure, but to set one's self forthwith to search for remedies is to expose one's self to what is only too often a fruitless labor. It is in a manner to trust to accident for advance. Better is it to undertake in the first place to study the nature of the disease, its cause and development, in the distant hope of thereby discovering means of preventing it. If the problem of rabies is to-day no longer insoluble, it is to these last-named methods that we owe this advance. Thus we have proved that the virus of rabies always develops itself in the nervous system, in the brain, the spinal cord, the nerves, and the salivary glands, and never simultaneously invades every part. It may, for example, fix itself in the spinal cord, and then attack the brain; or one may find it in one or more parts of the brain and not in others.

If one kills an animal when the disease is at its height, it is often difficult to find the virus of rabies at any given point in the brain or

spinal cord, but we have fortunately discovered that, in every case in which death occurs as a natural result of the development of the disease, the uppermost portion of the spinal cord, which forms the point of transition between the cord and brain, and which one calls *the bulb*, is invariably the seat of the poison. When an animal dies of rabies (and we know that the disease invariably ends in death), it is absolutely certain that one will be able to obtain from the animal's *bulb* rabies virus, which will produce the disease by inoculation on the surface of the brain in the arachnoid cavity, after previous trephining.

If you take any street-dog you please and inoculate rabies in this manner by trephining, using as inoculating material a portion of the bulb of an animal which has died of the disease, you will invariably convey rabies. The dogs to which the disease has been communicated in this manner are to be counted by hundreds. The method has never failed. The same operation has been performed on hundreds of Guinea-pigs and on a yet greater number of rabbits, without a single failure.

These two remarkable results—the invariable presence of the virus in the bulb of animals dead of the disease and the certainty that one can communicate rabies by inoculation in the arachnoid cavity—are axioms firmly established by experiment, and are of extreme importance. Thanks to the careful application and the so to speak daily employment of these criteria, we were able to proceed with certainty in a study of such difficulty. But, however solid this experimental basis may be, it is not in itself able to show us the way to a vaccination method against rabies. In the present position of science, to presuppose the discovery of a means of preventing infectious disease by vaccination—(1) one must have at one's disposal a virus which can exist in different degrees of virulence, the weakest of which may serve as a vaccine; (2) one must have discovered a method of producing these varying degrees of virulence. Hitherto science has known only one kind of rabies, that which occurs in dogs. All hydrophobia, in dogs, men, horses, cattle, wolves, foxes, etc., comes originally from the bite of a mad dog. Rabies never arises spontaneously, either in the dog or any other animal.

None of the instances on record of rabies occurring spontaneously are really authentic; I will add that in making this assertion I do not ignore the fact that there must have been a *first* case of rabies. To come forward with this kind of objection, when it is a question of solving the inquiry which engages us, helps no one, but touches a problem which even now is still inscrutable—the very problem of life. It is like answering one who should maintain that an ovum always originates from an ovum, but, nevertheless, that the first ovum must have originated spontaneously. Science, which knows itself, sees that it benefits nobody to argue about the origin of things; it sees that such origin for the moment at least lies beyond its province.

In short, the inquiry whether the rabies virus can occur in different degrees of virulence, like the virus of fowl cholera, of splenic fever, etc., is the first question to solve in order to arrive at the prophylaxis of hydrophobia. But how does one obtain the knowledge that there are various possible degrees of virulence in the virus of fowl cholera? And to what signs does one have recourse to determine the strength of a virus which kills whenever it infects?

Does rabies present any symptoms to help us? No, these symptoms are very variable. They depend essentially on the brain or spinal cord, where the virus instantly concentrates itself and flourishes. The mildest rabies that occurs—for such does occur—may in another animal of the same species produce the most violent rabies. Can one then determine intensity by means of the duration of the incubation period? No, nothing is more variable. A mad dog bites several dogs; one of these goes mad after an interval of a month or six weeks, another after two or three months' interval, and so on. Further, nothing can be more variable than the duration of the incubation period, according to the various modes of inoculation. Does one never see hydrophobia now occur and now fail to occur after a bite or hypodermic injection under exactly similar circumstances in every other respect, while inoculation on the surface of the brain never fails, and the incubation period is in such case of proportionally short duration?

Nevertheless, it is possible to determine with sufficient certainty the strength of a rabies virus according to the duration of the incubation, but on two conditions: one must make use of intracranial inoculation, and one must bear in mind that the manner in which inoculation takes

place furnishes one of the most powerful sources of irregularity in the results, according as inoculation is by bite, by hypodermic or intravenous injection. The duration of incubation may really depend very much on the quantity of active virus, that is, the virus which reaches the nervous system without diminution or change. Notwithstanding that the quantity of virus which will produce rabies may be, so to say, infinitely small—it has been shown that, as a general rule, hydrophobia occurs in consequence of a bite, whereby the quantity of virus introduced into the body must generally be so small as to be almost indefinable—it is easy to double the length of the incubation, simply by taking a still smaller proportion of the small quantity inoculated. I will quote some examples:

On May 10, 1882, there were introduced into the popliteal vein of a dog ten drops of a fluid which had been obtained by macerating in three to four times its weight of sterilized broth a portion of the bulb from a dog which had died of rabies after being found in the streets in a mad condition.

A second dog was inoculated with a hundredth part of the quantity, and a third dog with a thousandth. The first dog was seized with rabies after an incubation period of eighteen days, the second after thirty-five days, the third remained unaffected, i. e., in this last case, and by the method of inoculation used in this experiment, a certain quantity of virus proved insufficient to produce rabies. This last dog was susceptible of rabies, as all dogs usually are, for it was again inoculated on September 3, 1882, and was seized with rabies twenty-two days later.

I take another example, which occurred in rabbits, and in which another mode of inoculation, viz., trephining, was employed: The bulb of a rabbit, which had died of rabies after inoculation with a very virulent virus, was dissolved in two or three times its bulk of sterilized broth. After it had been allowed to stand for some few seconds, two drops of the supernatant liquid were inoculated into a rabbit by trephining, another was inoculated with a fourth of that quantity, and other rabbits were subsequently inoculated with $\frac{1}{16}$, $\frac{1}{32}$, $\frac{1}{64}$, and $\frac{1}{128}$ of the same quantity respectively. All these rabbits died of rabies, and the length of incubation was eight days in the first, nine in the second, ten in the third and fourth, and twelve to sixteen days in the two last. This variation in the period of incubation was not occasioned by an attenuation of the actual virulence of the virus, such as might be produced by solution, for there was a return to the eight days' incubation period if fresh rabbits were inoculated with the virus obtained from these rabbits after death. We see from these examples that, in the case where rabies is produced by a bite or by hypodermic injection, interference with the length of the incubation period must be chiefly ascribed to the great variation which is possible in the amount, always indefinite, of inoculated poison which reaches the central nervous system.

If, then, we wish to determine the intensity of the virus from the length of the incubation period, it is unavoidably necessary to have recourse to inoculation by trephining, which is absolutely certain in its effects, and to employ larger quantities than such as would be necessary simply to produce rabies. When we operate in this way, irregularities in the length of incubation with the same virus will show a tendency to entirely disappear, because we always obtain the maximum of effect which the virus can produce, that maximum corresponding to the minimum duration of incubation.

Thus we have at length obtained a method which has enabled us to inquire into the possible existence of varying degrees of virulence, and to mutually compare them. The only secrets in this method, I repeat, are to inoculate by trephining, and to use a quantity of virus, which, although very weak, is more than sufficient to produce rabies in and by itself. This method eliminates the causes which might interfere with the duration of the incubation period, and makes it dependent exclusively on the activity of the virus, the comparative strength of which varies according to the minimum duration of incubation, which is determined by its effect.

The first application of this method was in connection with the study of rabies, and expressly in connection with attempts to discover if rabies is always one and the same, only with such differences as the varying nature of different kinds of dogs might produce. Let us, then,

take wandering mad dogs at any season you please in the same year, or in different years, and belonging to the most different varieties. Let us in each case isolate the bulb, and with the material obtained from it inoculate, by trephining, from one to two rabbits, using two drops of the fluid obtained by macerating the bulb in two or three times its bulk of sterilized liquid—all proper cleanliness being observed. Let the inoculation be performed with the help of a Pravaz's syringe, somewhat bent at the end, introducing it through the dura mater into the arachnoid space. The following will be observed: In all the rabbits, no matter what mad dog was used to inoculate them from, the incubation period will fall almost without exception between the twelfth and fifteenth days—you will never meet with an incubation period of eleven, ten, nine, or eight days, though you may sometimes meet with periods of several weeks or several months.

Rabies thus, clearly enough, possesses one poison only: its modifications, which, however, are very limited, depend simply on the known difference in the susceptibility of various kinds of dogs. But we shall now see a very marked change in the virulence of rabies virus.

Let us take after death one of the numerous rabbits which we have inoculated with the virus taken from a mad dog, and let us introduce two drops of its bulb, prepared in the way given above, into another rabbit, whose bulb again shall serve to inoculate a third rabbit, and its bulb again to inoculate a fourth, and so on. You will then observe, even from the first transmission, a diminution in the incubation period in the various rabbits. I will give an example:

In the last month of 1882, fifteen cows and one bullock died of rabies on one farm near Melun, a principal town in the Department Seine et Marne, in consequence of having been bitten on October 2d by the farm dog, which had gone mad. The head of one of the cows, which died on November 19th, was sent to the laboratory of M. Rossignol, a veterinary surgeon at Melun. Numerous experiments, performed on dogs and rabbits, showed that only the following parts were the seat of the virus, viz., the cerebrum, bulb, and cerebellum, the frontal and temporal lobes. The rabbits which were inoculated from these parts were seized with the disease on the seventeenth or eighteenth day after inoculation. With the bulb taken from one of these rabbits after death two other rabbits were inoculated, one of which was attacked by the disease on the fifteenth day, and the other on the twenty-third day after inoculation. I will observe once for all that, if we transmit rabies from one animal to another of a different species, before the virus has reached its maximum in the former, considerable irregularity is met with in the duration of the incubation period. We have here an instance of this, for the same virus in one rabbit gave an incubation period of fifteen days, and in the other one, of twenty-three days, though all the other conditions were apparently similar.

With the bulb taken from the former of these two dead rabbits, two other rabbits were inoculated. In one of these the disease appeared after an interval of ten days; in the other after an interval of fourteen days. The bulb of the former of these was in like manner used to inoculate two more rabbits, in whom the disease appeared after intervals of ten and twelve days respectively. In the fifth transmission to two rabbits, the disease appeared in both after eleven days' interval, in the same manner in the sixth transmission the disease appeared after eleven days' interval, in the seventh after twelve days' interval, in the eighth after ten days' interval, in the ninth also after ten days' interval, in the tenth after nine days, in the eleventh after eight days, in the twelfth after nine days, and so on, with variations of not more than twenty-four hours at the outside, right down to the twenty-first transmission, when rabies appeared after eight days' interval; the same interval of eight days was obtained in further transmissions, down to the fifteenth, which has recently taken place. This series of experiments, which commenced on the 19th November, 1882, is still in progress.

Allow me at this point to draw your attention to the extreme certainty and facility which characterize trephining and subsequent inoculation with rabies virus; for on every twelfth day for a period of about twenty months, a succession of rabbits have been trephined and inoculated with a rabies virus procured from a single individual, and that without any interruption in the success of the experiments.

Guinea-pigs most rapidly attain the maximum virulence peculiar to

them. In these animals the incubation period, which varies and is irregular at the beginning of successive transmissions, quickly attains a definite duration of five days. Seven or eight transmissions from Guinea-pig to Guinea-pig brings us to the maximum virulence. Moreover, both in Guinea-pigs and rabbits, one observes, according to the origin of the virus, variations in the number of transmissions required to obtain the maximum virulence. If we transmit this maximum degree in rabbits and Guinea-pigs to dogs, we obtain a virus which far surpasses in virulence that of the rabies which is commonly met with.

But I hasten to say that, whatever may be the usefulness of the discovery which I have just described, there exist and can be produced different kinds of rabies—all of which are more violent and kill more rapidly than the rabies which occurs in dogs. Scientific men overlook nothing which can be discovered in the field of science, but many whom the very thought of rabies strikes with fear look for something more than scientific curiosities. How much greater interest would man have in becoming acquainted with a rabies virus which had been attenuated in its virulence! One, then, might cherish a hope of obtaining a vaccine from the rabies virus such as we have obtained in fowl cholera, splenic fever, and even acute septicæmia. Unfortunately, the methods of procedure which were used in regard to these poisons proved themselves inapplicable in dealing with the virus of rabies. It therefore became necessary to try new and independent methods; for instance, cultivation of the rabies virus in glass.

Jenner was the first to propound the idea that the poison which used to be called "grease" in horses, but which we now more accurately describe as "horse-pox," must be attenuated in its poisonous activity, if I may use the expression, by being transmitted through cows before it could be introduced without danger into the system of man. This induced us to think it might be possible to attenuate the rabies virus by passing it through the bodies of certain animals. Many attempts were made, but in the majority of the experiments on animals the poison increased in virulence, just as in rabbits and Guinea-pigs; fortunately this was not so in the case of monkeys.

On December 6, 1883, the bulb of a dog, which was known to be mad from the fact that a child which it had bitten had died of hydrophobia, was used to inoculate a monkey by trephining. The monkey was attacked with rabies eleven days later; from the first monkey the virus was transmitted to a second one, which was also attacked with rabies after eleven days' interval. In a third monkey rabies declared itself after an interval of twenty-three days, and so on. With the bulb of each of these monkeys two rabbits were inoculated by trephining. The rabbits which were inoculated from the first monkey were seized with rabies after intervals of thirteen and sixteen days respectively; those inoculated from the second monkey after fourteen and twenty days; those from the third after twenty-six and thirty days; those from the fourth after twenty-eight days in each case; those from the fifth after twenty-seven days; and those from the sixth after thirty days.

It is thus impossible to doubt that by transmission from monkey to monkey, and from the different monkeys to rabbits, the strength of the poison is weakened in the latter just as it is weakened in the dog. A dog which was inoculated with the bulb of the fifth monkey had an incubation period of not less than fifty-eight days, although inoculation was performed by trephining. Other experiments of the same nature, which were performed on a series of monkeys, led to results of a like character. We are thus in possession of a method which enables us to attenuate the virulence of rabies. Successive transmissions from monkey to monkey produce a virus which, on being transmitted to rabbits, communicates rabies after an incubation period, the length of which gradually increases. If, on the other hand, one passes on from these rabbits to successively inoculate fresh rabbits, the rabies comes under the law of increasing virulence on transmission from rabbit to rabbit, of which I have already spoken. The application of these facts yields a method of vaccinating dogs as a protection against rabies. We take as a starting-point one of the rabbits which have been inoculated from monkeys to such a sufficient degree that hypodermic or intravenous injection does not cause death. The succeeding preventive inoculations are performed with the virus-containing bulbs of the rabbits which have been the subjects of successive transmissions of infection from rabbit to rabbit, proceeding from the first infected.

In our experiments we have as a rule employed inoculation with virus from rabbits which have died after an incubation period of four weeks, but three or four times we have renewed our preventive inoculation from the bulbs of rabbits which have been inoculated from the rabbit which served as our point of departure.

After I had brought into use this method of vaccinating dogs as a protection against rabies, and had collected a large number of dogs which were rendered insusceptible of the disease, foreseeing a more extensive application of the method, and remembering the opposition which was at first shown to Jenner's discovery, I determined to lay before a scientific commission such of my results as it was obvious must serve in the future as the basis for the vaccination of dogs for rabies.

The Under-Minister of Instruction, M. Tallières, to whom I mentioned my project, was willing to support it, and appointed MM. Béclard, Paul Bert, Bouley, Tisserand, Villemin, and Vulpian to inquire into the facts, which I had already communicated to the Academy of Sciences at its meeting on May 29th. After having chosen M. Bouley as President, and M. Villemin as Secretary, the commission at once set to work and I have the satisfaction of being able to tell you that it has quite recently presented its first report to the minister.

I will now give a brief account of the results with which the first report of this commission deals. I presented to the commission nineteen vaccinated dogs, all of which had been rendered insusceptible by preventive inoculation, and thirteen of which after vaccination had been proved by inoculation by trephining. These nineteen dogs were compared in different ways with nineteen dogs chosen from others for the purpose of the experiments. In the first place, on the 1st of June, two of the protected dogs and two of the trial dogs were inoculated by trephining under the dura mater with the bulb from a mad street-dog. On the 3d of June, one protected dog and one trial dog were bitten by a mad street-dog. On the 4th of June, the commission made the same mad dog bite another protected and another trial dog. On the 6th of June, the mad dog which had been used on the 3d and 4th of June died, and with its bulb three protected dogs and three trial dogs were inoculated by trephining. On the 10th of June, the commission had one protected dog and one trial dog bitten by a fresh mad dog from the streets. On the 16th of June, the commission had two fresh dogs, one protected and one trial dog, bitten by one of the trial dogs of the 1st of June, which had gone mad on the 14th, as a result of the trephining performed on the 1st of June. On the 19th of June, the commission had three protected and three trial dogs inoculated in one of the popliteal veins with the bulb of a mad street-dog. On the 20th of June, the commission also had ten dogs—viz., six protected and four trial dogs, chosen from several others—inoculated in a vein. On the 23th of June, it having been brought to the knowledge of the commission that a veterinary surgeon, M. Paul Simon, had a mad dog in his hospital, four dogs were brought to it—viz., two protected and two trial dogs—in order that it might bite them.

The commission on rabies has thus performed experiments on thirty-eight dogs, nineteen of which had been supplied by me as insusceptible to rabies, while the other nineteen could be made mad. Those of the dogs which have not died as a result of the experiments are under observation, and will be kept under it for a long time. As to the present condition of the dogs which have been the subject of inquiry, the commission report that, in the case of the nineteen trial dogs, of six which were bitten rabies occurred in three, of seven which were inoculated in a vein it occurred in five, and of five which were inoculated by trephining it occurred in all, while not a single sign of rabies has shown itself in any of the nineteen vaccinated dogs.

During the course of the inquiry one of the protected dogs died on the 13th of July from a sanguineous diarrhoea, which first declared itself in the early days of that month. In order to determine whether rabies had any share in its death, three rabbits and one Guinea-pig were at once inoculated with its bulb by trephining. All of these four animals are still in the best of health, which is a certain proof that the dog did not die of rabies, but of a common disease.

The next report of the commission will contain information as to the insusceptibility to rabies of twenty dogs which have been vaccinated by the commission itself.

DRYNESS AND ELEVATION
THE MOST IMPORTANT ELEMENTS IN THE
CLIMATIC TREATMENT OF PHTHISIS.

By CHARLES DENISON, A. M., M. D.,

DENVER, COL.

(Concluded from page 288.)

1. *Temperature.*

Temperature is the greatest of all the producers of dryness. The relative humidity, varying from 30 per cent. or less of saturation up to complete saturation, is of small account compared with the capacity of the air to hold moistures under as widely varying degrees of temperature. A glance at the first two columns of Table I shows this capacity to be about one half a grain at zero and nearly twenty grains at 100° F. Thus it is seen that a relative humidity of 40 per cent.—an unusual occurrence at sea-level—in a very warm climate really indicates several times more moisture than the atmosphere can hold at saturation—an unusual occurrence in the Rocky Mountains—in a very cold climate.

2. *Altitude.*

It is when the conditions which prevail in the elevated interior of our continent are added to the influence of temperature that the extreme dryness is produced which is characteristic of that section.

Altitude is a very important agent in the production of dryness. The removal of the thick stratum of the, so to speak, vaporized atmosphere, such as covers the sea and lowlands, which intercepts the sun's rays, retains heat, obstructs radiation, and produces equability, is here to be noted. There are many conditions ushered in by altitude which have a favorable drying influence on the atmosphere. Prominent among them all is its cooling influence on temperature. Authorities differ, but it is safe to say there is an average lowering of temperature 3° F. for each ascent of one thousand feet in elevation. These changes are not always uniform for all the strata of the atmosphere, but are nearly so, if we except local and physical conditions which are favorable or detrimental, as the case may be, to certain localities.*

This cooling of the temperature, as we have already mentioned, lessens the capacity of the air to contain moisture, while still other conditions, which elevation insures, lessen the relative amount of moisture the air contains. These conditions are such as the character of the soil, the configuration of the earth's surface, and—what I have not seen noted by others—the expansibility of the air due to the diminution in atmospheric pressure. According to Glaisher's table, a given space of air at a given temperature will hold a given amount of moisture at saturation. If these tables are alike applicable to the atmosphere a mile above sea-level, then there is *relatively*, as well as *actually*,

* M. Glaisher, in the records of his balloon ascension, gave the fall in temperature as 5° F. for each of the first four inches of barometric fall; then 4° for each of the next eight, and 4.5° each for the next and last three inches fall.

much less moisture in the given space at the elevated station than at sea-level, temperature remaining the same, because some of all the constituents of the air, moisture included, have been driven outside the given space by the expanding influence of lessened atmospheric pressure. Is it not fair, then, to assume that actual dryness is doubly assured by elevation through the cooling process and by the diffusive effect of the expanding air?

3. *Latitude.*

Latitude insures dryness and variability—or their opposites, moisture and equability—as the distance from the equator is increased or diminished. This law is varied by the amount and character of the land exposed above the sea, by mountain ranges, and by air and ocean currents. It operates, so far as it goes, like altitude, through the effect of changed temperature, the qualities of moisture and equability following the increased heat toward the tropics, until under the equator greatly elevated localities begin to partake of the equability and moist characteristics of the lowlands in the north temperate zone.

4. *The Seasons.*

The seasons are, of course, synonymous with temperature in their effect on the humidity of the air. But there is a law to be drawn from the times of the sun's greatest and least influence upon the land and water making up the earth's surface which confines equability to the warm seacoast, and forbids her association with the desirable dryness that is found in the elevated interior of our continent. Land both absorbs and radiates the sun's heat more than water. The contrasts, then, for both the diurnal and seasonal fluctuations of temperature are exaggerated by land and lessened by the ocean. Land is, then, the *enemy* of equability and a *producer* of variability. Notice Guyot's isothermal lines, for winter and for summer, drawn around the globe (Johnson's "Encyclopædia," p. 981, vol. i). Those seasonal temperature lines which, but for ocean currents, would have run nearly parallel on the broad sea, immediately diverge on striking a continent, the summer isotherms running far to the north, especially in elevated sections, and those of winter bending toward the equator. What better evidence is needed that equability is the companion of the moisture-producing sea, while variability is the necessary consequence of inland elevations?

5. *Distance from the Ocean.*

Distance from bodies of water and absence of forests are alike favorable to dryness. It is in no small degree due to these characteristics that the extensive plateaux in Wyoming, Colorado, and New Mexico present a uniform dryness of atmosphere not found in the high altitudes of Switzerland (Davos, St. Moritz, etc.), though the latter are in great esteem among foreign physicians. The distilling process constantly going on over the sea and all bodies of water to supply the atmosphere with vapor, which returns to the thirsty land in rain, is wanting in the elevated interior of our continent. Not only is this so, but the more the forests are absent or

cleared away, the more the earth is not clothed with thick grasses and undergrowth (notice the short buffalo-grass, the dry cacti, and the sage-brush of Western elevations), so much the more is the quick draining of the land favored and any approach to the water-distillation of the ocean rendered impossible.

6. Mountain Ranges.

The upward projecting faces of the mountains intercept air-currents which come from a distance over damp, warm valleys, or perhaps an equatorial sea. The atmosphere, charged with 70 to 80 per cent. of invisible vapor, where those currents originated, is quickly raised to saturation by the cooling of the air in its onward, upward, and perhaps northward flight, and, as a result, the moisture is precipitated in rain or snow on the mountain-sides. This process is again repeated on the next interior and higher range of mountains, and again on the next, if there are more, until that occurs which is constantly to be noted in eastern Colorado—i. e., the southwestern winds, having thus traversed many mountain ranges, are the driest winds that reach that section, while the little rain that falls in the northeastern part of the State is brought by opposite currents from the north Missouri valley. Southward and into New Mexico, however, the same general reasoning holds good, the mountain ranges to the northwest furnishing the dry winds, and the Gulf of Mexico, on the south and southeast, those bringing rain. We find here an explanation of the peculiarity brought out by the rating of places in the extreme northwest section of the United States according to the climatic rule for dryness—i. e., summer very dry, but winter and spring very damp. The low temperature of the cold seasons is like the elevated mountain-sides. The warm equatorial or ocean winds are lowered in temperature and become rain-bearing, or approximately so, as they sweep over that northwestern land.

7. Absorbing Power of the Earth.

The earth has an absorbing power of greater or less degree. The less is seen in saturated and closely packed clay, in the mud of spring-time, and in swampy localities, while, on the other hand, the greater absorption resembles that of thirsty chemicals, such as porous dry sand and light, friable, loose earth. So much does dryness of the air depend upon this absorbing quality of the ground that it is impossible to find a very dry atmosphere where the characteristics of the soil are generally those having the least absorbing power. With this idea in mind, please compare, in the second column of Table II, already given, the fifteen driest with the fifteen moistest stations. Notice how very generally the highest relative humidities belong to the places of extreme moisture located in low sections with saturated or clay subsoil, while the lowest relative humidities are very decidedly in places of extreme dryness, all of which are known to be high and representative localities of large areas of dry sand, disintegrated rocks, and gravel, variously mixed. From northern Wyoming, western Nebraska, Kansas, and Texas, west and southwest, even to the Pacific borders of southern California, the latter characteristics abound, promoting the

rapid absorption of atmospheric moisture and the quick disappearance of rain and snow.

8. Radiation.

The experience of some of my patients who have resided among the foot-hills and in the cañons along the lower eastern borders of the Rocky Mountains has led to the belief that there was a somewhat increased curative influence there, more than was due to the dryness of the plains. I think we can attribute it to two sources: the greater facility and incentive for the very healthful climbing exercise, and to the increased radiation afforded by the many upturned faces of the broken-up rocks in sections destitute of the grasses and foliage of the level plains. This influence in many valleys, sheltered from strong inclement winds, tends each day during the long cold season to warm and dry the atmosphere in a manner unknown to the open country. It is here to be remarked that, through the effect of increased radiation, heat is necessarily not easily held stationary in the atmosphere, and thus the variability is explained which is remarkable in such exceptionally dry places.

9. Diathermancy of the Air.

The clearness of the air is a potential factor in producing the dryness of a given section. This is the case on the "backbone of the American continent," as the Rocky Mountain region is sometimes termed. There the much better results obtained by invalids occupying rooms on the south than on the north side of a house, the snow rapidly disappearing on the sunny side of a building while water is freezing in the shade, and the intense perception of the heating qualities of the sun's rays when falling on the bare surface of the human body—all these point to a peculiar condition of the stratum of air through which the sun shines.

This diathermancy, or the increased facility with which radiant heat is transmitted, I sought to determine by noting the influence, at various elevations, of the sun's rays upon ordinary metallic thermometers, as compared with the temperatures in the shade.* A sufficient number of observations were taken, excluding, as nearly as possible, the interference of any clouds, winds, or artificial heat, to approximately establish the following as the rule of increasing diathermancy of the air: For each thousand feet rise in elevation there are about four degrees greater difference between the temperatures in the sun and in the shade on perfectly clear days at 2 P. M., as recorded by the black metallic-backed thermometers, other influences than those of shade and sun being excluded.

When applied to sections a mile above the sea, like that east of the Rocky Mountain foot-hills, the estimation of this influence of the clearness of the air is very interesting with reference to increased solar and terrestrial radiation, and, consequently, as already shown, to the dryness of the air. "The solar radiation is rapid, and soon after sunrise the temperature rises because of the slight resistance which the rarefied and dry air offers to the sun's rays, while after

* "The Rocky Mountain Health Resorts." See chapter on the "Diathermancy of the Air," p. 66, second edition, 1882. Boston: Houghton, Mifflin & Co.

sunset the terrestrial radiation is also rapid, because there is no moist envelope shrouding the face of the earth to prevent the natural cooling of the dry ground.*

The therapeutic value of light and sunshine is, unfortunately, too little understood or appreciated. Lombard† states that *light stimulates and darkness impedes respiration*, and, through respiration, of course, animal heat and muscular activity. Moleschott proved this fact by experiments upon himself; and the scientists Bidder and Schmidt, noticing that animals, at rest, produced more carbonic acid in the day-time than at night, equalized the amount by depriving them of the influence of light. The experience of consumptives, some sixteen in all, seeking reputed benefit from the *equable* temperature of the Mammoth Cave in Kentucky, resulted, of course, in failure, five dying within a short time and others being injured—a result due, undoubtedly, to the darkness and dampness combined.

10. Sunshine.

It is no wonder that the sun has been the deity of worshipping millions, where his Creator has been unrecognized, for the source of life and means of growth of every living thing is the orb that ushers in the light and warmth of day. Almost equal to the combined evidence of both absolute and relative humidity—as to the dryness and desirability of a given climate—would be an exact statement of the proportionate time the sun shines over the country. Of course, the open and elevated sections would have proportionately more sunshine than towns secluded in valleys, and this would be in addition to that due to the more cloudless skies of the elevated interior.

No such records for the United States have been taken, however, and the nearest approximation to accuracy now obtainable are the cloudiness observations as made by the Signal Service and reported by telegraph at 7 A. M., 3 P. M., and 11 P. M., Washington time. These observations, averaged for seasons and graphically illustrated to represent the whole United States, I have been desirous of obtaining for several years past. I am pleased to be able to present them now as compiled by the Signal Service officers.‡

* In connection with the diathermancy observations mentioned, I pointed out the criticism to which the Signal Service methods of computing mean temperatures were liable. Particular reference was made to the rapid cooling of the air in the elevated sections named. The Signal Service, to compute their means of temperature, used to combine twice their cold 9 P. M. observations with the almost equally cold 7 A. M. and the one warm 2 P. M. observation, and divide the sum of these by four to obtain the average, a process manifestly misleading when one considers the ten warm hours which in Colorado prevail from 8 A. M. to 6 P. M. It is during these hours that being out of doors in a cold and rarefied atmosphere is especially enjoyable, and they are in strong contrast to those hours which used to make up three fourths of the day in the estimation of the Signal Service Bureau. The present method, however, according to which the foregoing data were obtained, is much nearer just to all sections. It consists in combining the 7 A. M., 3 and 11 P. M. observations, and dividing by three to obtain the daily records.

† *Traité de climatologie médicale*, par le Dr. H. G. Lombard, de Genève, Paris, 1877, p. 221, t. i.

‡ These charts, both for cloudiness (I, II, III, IV) and absolute humidity (V, VI, VII, VIII), were prepared by the Signal Service Bureau in response to a request presented by the author to the Colorado State

The four charts shown represent the mean cloudiness in tenths, zero being no clouds, and ten entire cloudiness.

Chart I, for spring, shows the upper section of the United States, from Washington Territory to Maine, and again from Maine along the Atlantic coast to North Carolina, also from Michigan south to Texas—a large section, where over five tenths of the observations showed cloudiness, while South Carolina, Georgia, Florida, and the entire southwest, from Wyoming to western Texas and southern California, are below five tenths cloudy; much of this region is far below that, the sections represented by Yuma and El Paso being less than two tenths.

Chart II, for summer, shows the much more equal distribution of clouds over the country than for any other season. In general, the eastern third of the United States, excepting the New England States and the Atlantic coast above North Carolina, are above five tenths, and nearly the whole of the western two thirds of the country below that. The eastern portion of California (Sacramento, Visalia, and the Death Valley) is even less than one tenth cloudy.

Chart III, for autumn, is, like spring, a fairer representation of the cloudiness for the whole year than either winter or summer, and yet there is a slight shifting of the most cloudy sections. Here the region of the lakes, the north Atlantic coast, and the northwest corner of the United States bear off the palm for cloudiness, being over five tenths; while the southwest is remarkable for the absence of clouds—Denver, El Paso, and Yuma being below 20 per cent. cloudy.

Chart IV, for winter, is characterized by the marked preponderance of cloudiness in two directions—the Mississippi and Ohio Valleys—where the percentage is above six, and the lake region, where it is above seven tenths, while in Washington Territory and Oregon the average is above six tenths cloudy. This is in perfect accord with the rating of all stations by the rule, as before explained. Central Colorado (Denver) and much of New Mexico, Arizona, and southern California show the least cloudiness—namely, two to three tenths.

11. Absolute Humidity.

A small number of grains of moisture to the cubic foot of air for a given temperature is the most exact measure of the dryness of a given locality that we can obtain from any one attribute of the atmosphere. If isotherms were run—as they should be—through the four accompanying charts, which give for seasons the grains of vapor to the cubic foot of air all over the United States, the variation of each locality from saturation could easily be determined by the aid of the preceding table of Guyot (Table I, column 2). The actual and relative dryness would thus be apparent for each separate place investigated. However, these charts (Charts V, VI, VII, VIII) show, in striking contrast, the much greater amounts, by accurate measurements, of moisture that the atmosphere contains in some portion of the United States than in others. For instance, for spring, summer, and

Medical Society at the session of 1883. A similar resolution, passed by the section on Practice of Medicine of the American Medical Association four years ago, resulted in nothing, for lack of the necessary interest on the part of the publishing committee.

autumn (Charts V, VI, VII), much of Wyoming, Colorado, New Mexico, Arizona, and Nevada contain one fourth in spring, one third in summer, and about one fifth in autumn, as much atmospheric vapor as Florida and the gulf coast in Texas, while in winter the greatly lessened capacity of the air to hold moisture at low temperatures is exemplified in the frozen atmosphere of the northern interior section, where there is not one tenth the absolute humidity there is on the gulf coast.

12. Relative Humidity.

There are but a few exceptions to the statement that the combined forces which produce atmospheric dryness also give a low rate of relative humidity. Saturation of the air with invisible vapor being 100 per cent., the relative per cent. actually found in the air is usually in harmony with the condition of dryness or moisture of a locality, 67 per cent. of saturation being about the mean for the United States.

But the few exceptions that there are to the above statement are sufficient to render relative humidity alone an unsafe guide as to the question of dryness. I think I have given this factor its full proportion of rating power in the rule for dryness by combining it—with its usually higher percentages—with both cloudiness and absolute humidity.

TABLE IV.

Places of Greatest and Least Relative Humidities, by Season and the Year 1883.

	Spring.	Summer.	Autumn.	Winter.	Average.
GREATEST.					
Mt. Washington, New Hampshire.....	91.9	91.5	88.6	86.5	89.6
Hatteras, North Carolina.....	79.7	80.6	84.1	85.4	82.6
Fort Macon, North Carolina.....	80.1	82.2	82.3	82.8	82.1
Cape Mendocino, California.....	85.2	80.1	78.9	80.1	81.1
Charleston, South Carolina.....	76.0	80.3	83.2	80.9	80.1
Pike's Peak, Colorado.....	83.9	75.5	78.7	81.3	80.0
Chincoteague, Virginia.....	76.8	81.8	80.1	78.8	79.6
Delaware Breakwater, Delaware.....	78.3	81.0	80.0	80.6	78.5
Smithville, North Carolina.....	77.8	77.3	79.2	82.5	78.5
San Francisco, California.....	77.7	80.1	78.8	75.3	78.3
St. Louis, Missouri.....	81.1	75.0	71.2	84.8	78.0
Kitty Hawk, North Carolina.....	77.7	77.9	77.9	78.6	78.0
Philadelphia, Pennsylvania.....	75.5	83.2	79.0	71.5	77.6
Deadwood, Dakota.....	83.6	71.7	72.9	81.1	77.6
Atlantic City, New Jersey.....	78.4	79.6	76.0	74.7	77.2
Average.....	80.2	79.8	79.4	80.3	79.9
LEAST.					
La Mesilla, New Mexico.....	32.0	44.4	47.4	49.5	43.2
Fort Grant, Arizona.....	38.1	46.3	41.3	55.7	43.3
Santa Fe, New Mexico.....	36.1	42.6	44.9	52.1	43.9
Pioche, Nevada.....	40.2	37.5	42.9	55.5	44.0
El Paso, Texas.....	34.2	41.0	53.6	50.4	44.8
Salt Lake, Utah.....	46.9	32.9	49.4	56.5	46.4
Yuma, Arizona.....	49.1	50.8	42.8	47.0	47.4
Cheyenne, Wyoming.....	56.6	55.0	47.9	47.8	49.3
Winnemucca, Nevada.....	52.0	28.6	52.9	65.5	50.0
Prescott, Arizona.....	47.5	48.9	47.1	58.1	50.4
Fort Davis, Texas.....	44.1	50.6	57.0	51.1	50.7
Fort Maginnis, Texas.....	50.9	41.9	56.2	51.4	51.6
West Las Animas, Colorado.....	46.3	48.9	53.4	61.0	52.4
Camp Thomas, Arizona.....	47.4	42.5	44.5	69.6	53.5
Denver, Colorado.....	55.8	50.8	50.1	57.4	53.8
Average.....	45.2	42.8	48.8	55.2	48.3

Relative humidity is somewhat fickle, because it is greatly influenced by purely local causes. For instance, currents of air which are absolutely dry, when rising to a higher

and inland point, become relatively moist and different from the undisturbed atmosphere of the locality or its immediate neighborhood. The high relative humidities of Mount Washington, Pike's Peak, and partly so of Deadwood, Dakota, Cape Mendocino, and San Francisco, Cal., in the foregoing table (Table IV), which gives the fifteen greatest and fifteen least mean relative humidities in the United States, are thus explained.

13. Dryness Indicated by Variability.

Hitherto it has not been customary for climatologists to see any good in variability.* They have rather preferred to champion its opposite—equability. It does not seem to have occurred to them that the qualities which they praised, such as clearness and purity of atmosphere—especially its freedom, with increasing elevation, from disease germs and the evidences of the lower forms of life which thrive on warmth, moisture, and equability—are largely due to the great seasonal and other ranges of temperature and to the nightly chilling or perhaps freezing of the atmosphere. It is not necessary to introduce any argument of a speculative

TABLE V.

Places of Greatest and Least Mean Daily Ranges of Temperature (1883).

	Spring.	Summer.	Autumn.	Winter.	Average.
GREATEST.					
Fort Apache, Arizona.....	38.1	35.5	37.8	30.8	35.5
La Mesilla, New Mexico.....	37.8	33.2	32.0	34.6	34.4
Prescott, Arizona.....	33.7	30.1	31.4	30.8	31.5
West Las Animas, Colorado.....	30.0	29.2	33.4	35.8	31.3
El Paso, Texas.....	34.8	32.1	30.2	26.3	30.8
Camp Thomas, Arizona.....	33.9	29.0	32.1	28.5	30.8
Fort Stockton, Texas.....	32.7	26.7	26.4	27.7	28.3
Winnemucca, Nevada.....	26.0	35.3	28.1	22.5	27.9
Yuma, Arizona.....	31.0	28.9	26.4	23.8	27.3
Visalia, California.....	26.1	33.6	29.2	18.1	26.7
Fort Davis, Texas.....	29.7	23.8	24.8	24.3	25.6
Fort Elliott, Texas.....	25.5	22.7	26.6	25.6	25.1
Fort Concho, Texas.....	27.9	25.4	23.9	22.8	25.0
Fort Benton, Montana.....	24.9	27.9	21.4	25.2	24.8
Denver, Colorado.....	23.4	24.4	24.7	22.0	23.6
Average.....	30.7	29.1	28.4	26.5	28.7
LEAST.					
Eastport, Maine.....	13.0	18.3	10.8	15.4	14.3
Provincetown, Massachusetts.....	12.6	18.3	9.8	12.1	13.2
Buffalo, New York.....	13.7	12.5	14.0	12.1	13.0
Sandusky, Ohio.....	13.7	13.0	11.8	12.4	12.7
Indianola, Texas.....	11.6	12.7	12.8	12.9	12.5
Cedar Keys, Florida.....	13.2	11.2	13.1	12.5	12.5
Barnegat, New Jersey.....	12.4	13.3	10.6	13.4	12.4
Sandy Hook, New Jersey.....	13.8	13.8	10.2	12.1	12.4
Delaware Breakwater, Delaware.....	12.1	12.6	10.7	12.5	11.9
Cape Mendocino, California.....	11.7	11.8	11.7	11.6	11.7
Hatteras, North Carolina.....	12.8	11.4	9.6	12.4	11.5
Block Island, Rhode Island.....	10.0	11.6	9.0	12.2	10.7
San Francisco, California.....	11.4	10.2	10.2	8.8	10.1
Key West, Florida.....	10.2	12.5	8.4	8.8	9.9
Galveston, Texas.....	9.3	9.6	8.8	10.5	9.8
Average.....	12.1	12.9	10.8	12.0	11.9

* If it is attempted to make any exception in favor of such places as Cape Mendocino or other California towns bordering on the ocean, let it be understood that, though the ground is dry and parched, the equability is due to a continuous moist wind which blows landward from the Pacific Ocean and does not part with its equable characteristics until, rising on the interior ranges of mountains, it has lost its moisture and become dry and therefore variable.

character. Statistics prove, beyond the possibility of successful contradiction, that variability is a distinguishing attribute of really dry places—whether elevated above sea-level or not—and that equability is, as a rule, characteristic of a uniformly damp atmosphere.

The foregoing table, giving fifteen places each of the greatest and least mean daily ranges of temperature for seasons and the year from all the Signal Service stations in the United States, is a sufficient proof in itself of the general statement here made. So also is the record of the mean daily and mean monthly ranges of the twenty-five dry and the twenty-five moist localities (for the former see Table II, and for the latter see Table VI, giving monthly ranges with average precipitation added), and chosen without any reference to this particular evidence. For the four divisions of climate the total mean daily and monthly ranges, averaged for the year, are as follows:

	Means of Daily Ranges.	Means of Monthly Ranges.
1. Extreme dryness.....	36°-51° F.	53°-65°
2. Moderate dryness.....	20°-63°	49°-38°
3. Moderate moisture.....	17°-09°	45°-48°
4. Extreme moisture.....	13°-61°	41°-55°

TABLE VI.

	Average precipitation, Inches of rain and melted snow, com- puted from com- mencement of obser- vations to January 1, 1884.				Means of extreme monthly ranges of temperature, from commencement of observations to January 1, 1884.			
	(5)				(8)			
	Spring.	Summer.	Autumn.	Winter.	Spring.	Summer.	Autumn.	Winter.
FIVE DRYEST.								
Yuma, Arizona.....	0.18	0.48	0.16	1.26	50°-5	45°-2	48°-4	43°-2
El Paso, Texas.....	1.09	6.17	2.52	1.72	57°-5	43°-9	52°-1	52°-9
La Mesilla, New Mexico.....	1.21	2.81	2.14	1.74	60°-4	49°-4	59°-2	60°-1
Pioche, Nevada.....	1.86	1.76	0.98	1.87	53°-3	47°-0	52°-9	48°-7
Prescott, Arizona.....	2.18	5.86	2.32	3.38	61°-1	52°-8	57°-1	60°-8
FIVE FIRST HALF EXTREME DRYNESS.								
Santa Fé, New Mexico.....	1.93	7.56	3.18	1.81	54°-4	43°-3	50°-2	52°-1
Denver, Colorado.....	5.62	5.03	2.47	1.69	62°-1	49°-7	62°-7	68°-0
Fort Davis, Texas.....	2.30	11.99	4.35	1.18	55°-7	45°-3	50°-7	63°-4
Red Bluff, California.....	7.08	0.21	4.44	17.12	49°-3	50°-0	45°-6	37°-4
Fort Grant, Arizona.....	1.59	8.63	2.62	2.69	52°-2	40°-1	46°-4	49°-1
FIVE SECOND HALF EXTREME DRYNESS.								
Fort Elliott, Texas.....	6.41	8.01	6.03	0.84	62°-5	49°-0	62°-3	72°-0
Salt Lake, Utah.....	6.42	2.18	4.26	4.12	47°-2	47°-4	49°-2	41°-3
Cheyenne, Wyoming.....	3.65	4.63	1.90	0.50	60°-8	52°-4	62°-6	65°-3
Fort Apache, Arizona.....	2.36	10.78	4.67	4.49	60°-7	54°-4	57°-4	62°-9
Eagle Rock, Idaho.....	4.74	2.07	3.39	8.48	51°-8	59°-3	61°-5	61°-0
FIVE FIRST HALF MODERATE DRYNESS.								
Fort Assinaboine, Montana.....	2.92	4.44	5.19	3.22	59°-5	52°-3	59°-9	74°-9
Fort Maginnis, Montana.....	3.58	1.71	3.88	2.92	52°-7	54°-3	59°-3	79°-3
Fort Concho, Texas.....	6.00	10.51	8.33	3.62	57°-7	44°-1	54°-4	61°-3
Sacramento, California.....	7.69	0.12	2.53	11.37	41°-9	45°-6	43°-0	32°-0
Lewiston, Idaho.....	3.56	2.06	4.11	8.07	50°-4	52°-4	45°-5	43°-8
FIVE SECOND HALF MODERATE DRYNESS.								
Los Angeles, California.....	4.28	0.02	1.57	8.86	46°-0	39°-0	46°-9	41°-7
North Platte, Nebraska.....	5.47	9.32	3.29	1.79	64°-5	51°-3	65°-4	68°-6
San Diego, California.....	1.91	0.30	2.14	6.06	63°-1	33°-0	34°-0	33°-6
Dodge City, Kansas.....	6.28	8.91	3.13	1.49	63°-7	49°-5	62°-0	65°-7
Cape Mendocino, Cal.....	6.25	0.02	6.05	8.02	29°-3	28°-7	33°-3	30°-7

TABLE VI (continued).

	Average precipitation, Inches of rain and melted snow, com- puted from com- mencement of obser- vations to January 1, 1884.				Means of extreme monthly ranges of temperature, from commencement of observations to January 1, 1884.			
	(5)				(8)			
	Spring.	Summer.	Autumn.	Winter.	Spring.	Summer.	Autumn.	Winter.
FIRST HALF MODERATE MOISTURE.								
Lynchburg, Virginia.....	10.3	10.8	9.9	9.7	50°-1	38°-9	46°-0	51°-5
Yankton, Dakota.....	9.0	12.1	5.1	2.1	63°-9	48°-8	63°-4	68°-2
Leavenworth, Kansas.....	11.0	13.9	9.0	4.8	56°-9	40°-8	54°-8	61°-3
Savannah, Georgia.....	11.9	19.3	11.7	10.1	40°-9	28°-8	38°-2	45°-2
San Francisco, California.....	5.4	0.2	4.0	14.1	28°-3	26°-1	27°-6	22°-4
SECOND HALF MODERATE MOISTURE.								
Atlanta, Georgia.....	15.5	10.6	11.0	19.8	44°-9	33°-1	41°-9	48°-5
St. Paul, Minnesota.....	7.4	12.2	6.9	3.4	55°-8	43°-4	54°-3	59°-3
Jacksonville, Florida.....	10.5	17.8	15.4	9.8	41°-8	29°-2	37°-3	44°-9
Washington, D. C.....	10.1	13.3	10.3	8.9	51°-9	39°-7	44°-3	55°-0
Boston, Massachusetts.....	12.5	11.8	12.7	11.1	51°-1	42°-9	48°-5	55°-7
FIRST HALF EXTREME MOISTURE.								
Buffalo, New York.....	8.3	9.5	10.7	8.5	48°-6	36°-3	45°-1	48°-5
Milwaukee, Wisconsin.....	9.6	10.3	8.2	5.7	48°-9	50°-8	49°-3	55°-9
Atlantic City, New Jersey.....	9.9	11.5	10.0	10.7	45°-8	34°-4	43°-8	48°-7
Nashville, Tennessee.....	14.5	12.6	10.5	14.1	48°-3	35°-7	47°-9	53°-7
Galveston, Texas.....	10.2	13.5	17.1	11.6	30°-8	21°-5	33°-3	36°-8
SECOND HALF EXTREME MOISTURE.								
St. Louis, Missouri.....	10.3	11.7	8.1	7.5	51°-9	37°-5	50°-8	59°-3
Grand Haven, Michigan.....	8.7	10.9	11.1	6.6	49°-2	38°-0	41°-6	45°-9
Erie, Pennsylvania.....	9.3	10.5	13.1	9.8	52°-6	36°-8	44°-2	51°-2
Indianola, Texas.....	7.4	9.3	13.2	7.5	37°-8	25°-8	37°-0	44°-3
Delaware Breakwater, Del.....	6.6	9.0	7.9	9.0	41°-1	29°-4	37°-8	42°-9
FIVE GREATEST MOISTURE.								
Brownsville, Texas.....	4.7	9.7	11.2	6.4	40°-7	26°-2	38°-7	45°-7
Hatteras, North Carolina.....	18.1	17.5	20.8	18.3	35°-7	27°-3	35°-5	41°-4
Charleston, South Carolina.....	14.2	19.7	14.9	11.1	40°-2	28°-9	37°-3	43°-3
Fort Macon, North Carolina.....	15.1	20.1	15.1	14.6	36°-8	25°-3	36°-7	40°-7
Port Huron, Michigan.....	9.5	10.0	8.3	6.8	53°-3	41°-6	48°-7	50°-4

The places of extreme dryness, according to the rating rule, are more than twice as variable in daily temperature than those of extreme moisture, while the monthly means regularly decrease in variability at the rate of about 4° for each division of climate from the extreme of dryness to the extreme of moisture.*

Physical Effects of Dryness.

There are so many conditions which on the one hand vary the character of the air breathed, and on the other the respiratory activity, that any opinion of the effect of dryness which we can formulate will be only approximate. The chief effect, of course, is upon pulmonary transpiration, and enough can be gleaned from the experiments of Valentin, Sanctorius, Lavoisier, Seguin, Dalton, and others, to understand that this process is a very important part of our physiology; yet all of these investigators miss the mark we

* In making these computations, one can not help noticing the equalizing influence of the summer temperatures, an effect increasingly apparent as the extreme of moisture is approached. This is in perfect harmony with the preference to be given to a cool or cold temperature when desirable dryness is to be sought for a given invalid.

are now aiming at, which is to determine the amount of moisture exhaled (above that inhaled) in a dry *more* than in a damp atmosphere. They may all agree with Valentin that the amount exhaled in each twenty-four hours varies from 6,000 to 12,000 grains of vapor, according to the respiratory capacity, etc., in a man not severely exercising. I have not, however, been able to find any comparisons based upon the hygrometric condition of the air breathed.

Temperature and altitude, with distance from the sea, are such powerful agents in producing dryness that it is well for us to divide our own inquiry—namely, the increased pulmonary transpiration in (1) warm dry, and (2) in cold dry air.

First in warm dry as compared with warm moist air. Let us choose Yuma, Arizona, and Jacksonville, Fla., for the autumn of 1883, as they both had the same mean temperature for that season—71°3'. Dalton assumes, in his calculations, that the air passes from the lungs in a state of saturation, and Draper puts the dew-point of expired air at 94°. Let us assume that the expired breath brought down to 94° is saturated with vapor; that an ordinary-sized man breathes eighteen times a minute (Queletec) and expires twenty cubic inches at each breath when at rest (Hutchinson, Flint Jr., and others); that he breathes the same amount of air in Jacksonville as in Yuma, and that the loss by breathing of $\frac{1}{10}$ to $\frac{1}{60}$ in volume (Davy and Cuvier) is made up by the expansion of the air in the lungs being raised from 71°3' to the heat of the body. We have, then, the following calculation:

AUTUMN, 1883.	YUMA.	JACKSONVILLE.
Mean temperature.....	71°3'	71°3'
Weight of vapor with air saturated (Glaisher).....	8·33 grains. 428	8·33 grains. 774
Mean relative humidity.....		
Air breathed in 24 hours.....	300 cubic feet.	300 cubic feet.
Vapor inhaled in 24 hours.....	1,070 grains.	1,934 grains.
Vapor exhaled in 24 hours, with dew-point at 94°.....	5,007 grains.	5,007 grains.
Vapor exhaled more than inhaled in 24 hours.....	3,937 grains.	3,073 grains.

Excess for Yuma over Jacksonville, 864 grains a day.

The amount of air breathed ought to be increased one fifth, on account of the increase of breathing due to ordinary exercise. We thus have about $2\frac{1}{2}$ ounces, or $\frac{2}{5}$ of a gill, more moisture exhaled in Yuma than in Jacksonville each day.

Crawford has shown by experiments that the exhalation of carbonic acid from the lungs is much greater in low than in high temperatures, and Draper says twice as much carbonic acid is liberated with a temperature of 68° as at 106°, while Lehmann* has likewise shown that exhalation of carbonic acid is greater in a moist than a dry atmosphere, temperature remaining the same.† Therefore we are compelled, in order to favor the exhalation of carbonic acid, to take our dryness with the favorable cold temperature. This leads

* Lehmann, "Physiological Chemistry," Philadelphia, 1855, vol. ii, p. 414.

† Dr. Lombard, of Geneva, in a paper presented to the International Congress of Hygiene (September, 1882), concludes that "in the altitudes the digestion, the muscular exercise, and the lowering of the temperature increase and accelerate the exhalation of carbonic acid."

us to the more important comparison—that between warm moist and cold dry air. It is here that altitude, distance from the sea, etc., come in, as they produce both the coldness and the dryness we need.*

Let us choose Denver and Jacksonville for the autumn of 1883, and give Denver the benefit of one fifth greater amount of air breathed, the air there being about one fifth rarefied. This will account for the deeper and more frequent respirations† and the corresponding greater activity of the heart in ordinary life, but not for the greater increase under severe exercise, like climbing hills, etc.

We will assume as breathing in both places a good-sized man, thirty years old, breathing eighteen times a minute at sea-level, and expiring an average of thirty cubic inches (Dr. Gréhaud), ordinary exercise included:

AUTUMN, 1883.	DENVER.	JACKSONVILLE.
Mean temperature.....	50·4°	71°3'
Weight at saturation for given temperature grains in a cubic foot..	4·44	8·33
Mean relative humidity.....	·501	·774
Amount of air breathed in 24 hours {	933,120 cub. in., or 540 cub. ft.	777,600 cub. in., or 450 cub. ft.
Vapor inhaled in 24 hours.....	1,461 grains.	2,901 grains.
Vapor exhaled in 24 hours at 94° dew-point.....	9,013 grains.	7,510 grains.
Vapor exhaled above that inhaled in 24 hours.....	7,552 grains.	4,599 grains.

Denver's excess in transpiration, 2,453 grains, or $5\frac{1}{2}$ ounces, or $1\frac{1}{2}$ gills.

This would amount to over six ounces, or one and a half gill, if the considerable expansion of the air in being raised in the lungs from 50° to 98° is accounted for at Denver.

Denver and Cedar Keys, compared in the same way for last winter, results in 2,935 grains, or $1\frac{1}{2}$ gills more moisture being exhaled from the lungs in Denver than in Cedar Keys. Now, I wish to ask, Does it not stand to reason that this transpiration of surplus vapor is a most admirable vehicle for carrying away effete matter, wasted tissue, and the germs of disease (bacilli)? Is it a wonder that thirst for fluids, an appetite for food, as well as the ability to digest it, are greatly increased in all those who, coming to the elevated interior of our continent, can stand the strain without disturbance of the nervous system?

If the foregoing conclusions are reasonable, can you not imagine the decided influence, especially upon the respiratory activity and function, caused by climbing the hills and mountain-sides in Colorado, when one at sea-level, walking at the rate of three miles an hour, consumes three times as much air as when at rest (Dr. Edward Smith)?‡

* I have in mind the excellent results obtained in a year's sojourn in Colorado by a patient of mine, the daughter of a London physician, who had wintered in Algiers, a very warm dry place, and spent two winters at Davos, Switzerland, but is now decidedly confirmed in favor of Colorado as a sanitarium. The experience of other patients, who tried southern California and then settled in Colorado, also strengthens this preference to be given to dryness with a cool temperature.

† This allowance is equal to three respirations and three to five more cubic inches of air inhaled each minute.

‡ The uniformly increased thoracic capacity observed in young persons after taking up a residence in elevated regions, even to the production of local or general emphysema in some invalids who have had phthisis arrested there (Dr. C. Theo. Williams, London), is likewise explained by these considerations.

In fine, do you not think there was good ground for Dr. John Parkin's statement in the preface to the second edition of his brochure on "Climate and Phthisis"?*

"As so much ignorance exists in England on the subject of climate, even with medical men, and as so many invalids are annually subjected to what one writer has termed *medical transportation*, I am induced to publish another edition of this work in order to warn, once more, consumptive patients and others of the dangers attendant upon a sojourn in the south of Europe, and other warm climates more especially."

[We have been obliged to leave out the eight humidity and cloudiness charts intended to accompany this paper, because their preparation would have delayed its publication.]

ELECTROLYSIS IN THE TREATMENT OF ORGANIC STRICTURE OF THE URETHRA.

BY WILLIAM H. DUKEMAN, M.D.,
OLEAN, N. Y.

Of the various methods in vogue for the successful treatment of organic strictures of the urethra, electrolysis excels all others. This method has been before the profession for only a few years, and, to all who have given the operation a fair, impartial, and careful test, success has invariably been their crown of reward.

The operation by electrolysis is simple in its *modus operandi*, requiring no assistants and no anæsthetic. There is no hæmorrhage, and no pain inflicted, neither during nor after the operation. It does not debar the patient from his daily vocations. Life is not endangered, and the result is a permanent cure, and therefore the patient is not required to pass a sound every few weeks or months to prevent a recurrence of the stricture.

Where can we find another method of operation that can claim such safety, simplicity, and that glorious result, a permanent cure? I answer, Nowhere. Then why is this operation not more generally employed? Simply because it has not been thoroughly tested by those whose words speak authoritatively. In surgery it appears that if no artistic skill is required and no heroic measures are employed for the performance of an operation, little is said about it. In this operation no skill is required beyond that of passing a bougie successfully into the bladder. The work of the operation is all done by the galvanic battery. The operator merely introduces the bougie to the seat of the stricture and gently holds it there with the point in the proper direction, and the electricity slowly dissolves the stricture. He must only have patience to wait for the passage of the instrument through the stricture, just as he waits patiently when he places a fever thermometer in the axilla or under the tongue. Ten minutes will register that which he seeks for. In a little longer time, spent similarly after the bougie is introduced and working on the stricture by electrolysis, he will have achieved great results. An impermeable stricture will have been dissolved and permeated,

and the patient, who for months or years has not urinated *per vias naturales*, will get up and now urinate *per urethram*, and go away rejoicing. (See report of a case in the "Medical Record," vol. xxiii, No. 25, p. 679.)

Such results so easily obtained and an operation so simply performed appear to command no attention with most of our skilled surgeons, and the operation thereby does not receive the credit which should be accorded it.

With this plea for a more general employment of the operation, I again bring it before the profession.

In the "Medical Record," vol. xxv, No. 1, I gave directions for the successful performance of the operation, and will here reproduce them, viz.: "First, select a good galvanic battery which gives a steady, smooth, constant current of the strength of from ten to fifteen volts. The urethral instruments used for the absorption of the stricture are bougies made of metal and insulated with rubber, except the point, which is an olive-shaped silver bulb.

"The recumbent position is the best. To the positive pole a sponge electrode is attached, moistened with water, and placed in the patient's hand or on his thigh. To the negative pole the insulated electrode bougie must be attached, and the instrument should always be inserted into the stricture before connections to the battery be made. It is always advisable to begin the operation with a mild current and increase one cell at a time. The bougie must be gently guided, no force should be used, and no pain should be inflicted. Care must be exercised to keep the bougie in line so that the point will not deviate and make a false passage." To these I will add: An interval of four weeks has proved to give better satisfaction, and will require fewer operations than if performed more frequently.

When acute or subacute inflammation exists, unless the case is an urgent one, the operation had better be delayed until it subsides. In some cases the operation causes a little subacute inflammation, and, if we repeat the electrolysis at too frequent intervals, the urethra may almost close up from the swelling which takes place, and the operator then might become discouraged and abandon the operation. Possibly this has been the reason why some have denounced electrolysis as "of no good" in the treatment of urethral strictures.

As the stricture is partially decomposed, and gradually washed away after each operation, an instrument of about two sizes larger than the caliber of the stricture should be used at each *séance*. For instance, if the stricture admits a No. 11, French scale, bougie, a No. 13 would be the size of instrument for electrolysis. In four weeks the decomposed portion of the stricture will be washed away, and will then, in all probability admit a No. 15, when for our second electrolysis we would use a No. 17, French scale, and so on until we have completed a cure.

The time required to dissolve the stricture depends upon the bulk and extent and kind of stricture we have to deal with. Usually it takes from ten to forty minutes. In two cases, however, where I had to deal with a stricture of from one half to three fourths of an inch in length, it took nearly two hours.

All kinds of urethral strictures can be cured by electrolysis. The following case, with those already reported in

* Longmans, Green & Co., 1882.

different medical journals, will prove the foregoing assertion:

Mr. C. K., aged thirty, had been troubled with an organic stricture for a number of years, and was obliged to use a bougie at short intervals to keep the passage open. On March 5, 1884, from a slight injury received on getting out of a vehicle, inflammatory symptoms set in and in a few hours retention of urine resulted. The usual remedies, opiates, anæsthesia, and the hot bath, were tried; repeated attempts, by several physicians, were made to pass a catheter, but to no purpose. After retention had existed for twenty-four hours I was called to operate by electrolysis. I hesitated, for there was considerable hæmorrhage. As the case was an urgent one and relief had to be given either by puncturing the bladder or by an operation, I concluded to operate by electrolysis. A No. 9 French insulated electrode bougie was introduced to the seat of the stricture, which was at the prostatic end of the membranous portion of the urethra. Connections were made to the galvanic battery with twelve cells in operation. It took one hour for the bougie to pass through the obstruction. Four physicians were present and witnessed the operation. The bougie was withdrawn and the patient urinated. A No. 9 silver catheter was inserted and retained for three days, and the patient made a rapid recovery.

As experience has proved that there is not the slightest danger connected with or resulting from the operation, and that all kinds of strictures of the urethra are amenable to the treatment, certainly this method should be adopted in preference to all others. I again ask that the operation be given a fair, careful, and impartial trial.

A CASE OF EXTERNAL AND INTERNAL URETHROTOMY.*

By L. H. DUNNING, M. D.,
SOUTH BEND, IND.

THE patient, David Holland, aged forty-six years, was seen by me in February, 1884. He had been confined to bed a number of weeks on account of partial retention of urine and an abscess located in the perinæum and adjacent structures along the tract of the urethra. This abscess had been in process of development several weeks, and, at the time of my first visit, had matured, but the patient refused to allow it to be lanced. The following day it ruptured into the urethra, and externally, just above the penis.

When first seen, the patient was voiding small quantities of urine every half hour or every hour. After the rupture of the abscess the ability to void urine was slightly increased. The discharge of pus was profuse.

The patient stated that previous to this attack he had for seven years been unable to voluntarily void urine, and that his inability to so do was ascribed to an enlargement of the prostate gland, following prostatitis. He had evacuated the bladder with the catheter from four to six times a day every day for seven years. The strictures, he stated, had been gradually developing for some three years, and were induced by the careless use of catheters, both by himself and physicians who had treated his case during the time. Just previous to this attack he had used a No. 4 (English) silver catheter, but for the last few weeks had been unable to enter the bladder with any instrument.

I did not at first attempt to pass a sound, but simply advised

rest in bed, administered anodynes and tonics, and directed poultices to be applied to the indurated surfaces in the perinæum and over the pubes.

At the end of three weeks I made a careful examination, and found a much-enlarged prostate gland and three strictures of the urethra, viz.: One, one inch and a half beyond the meatus, one, two inches and a half, and another six inches beyond the meatus. Through the first two I was able to pass a No. 3 (English) sound, but through the third one I could not pass this sound. After considerable manipulation I succeeded in passing a small whalebone bougie, which had the extremity bent to an angle slightly greater than a right angle. Afterward I passed a small catgut bougie, and tried to follow it into the bladder with an Otis tunneled catheter, and then a Gouley tunneled catheter, and failed in both instances. After a few days I tried to pass small, soft bougies into the bladder with success, but the next time failed. So it went on a number of days, when, finding that each effort rendered the strictures more irritable, and the difficulty in passing the urine greater, I desisted, concluding to perform external urethrotomy for the relief of the deeper stricture, and internal urethrotomy upon the first two. Now the patient was voiding urine with great difficulty, using as much force in straining as does a woman in ordinary labor. His suffering was indeed intense. Rest, anodynes, and a milk diet relieved him somewhat, and April 14th we reached a time when we deemed an operation safe and advisable.

The external urethrotomy was done in the usual manner with a guide. The stricture was found to involve the whole of the membranous portion of the urethra, and was freely divided through its whole extent.

After the division of the stricture the catheter (Gouley's) passed readily into the bladder.

Next, I undertook the division of the first two strictures with an Otis's dilating urethrotome, passing the instrument through the orifice. We found ourselves unable to pass the instrument beyond the strictures, notwithstanding the fact that we had repeatedly introduced sounds of larger size than our Otis. An examination through the wound led me to the belief that the instrument could be passed from below upward. This we finally accomplished, but not without the help of a guide.

The beak of the urethrotome appearing at the meatus, it was slightly withdrawn (within the orifice), expanded, the knife drawn out, and the stricture completely divided. The second stricture was similarly treated, with like results.

A No. 13 (English) sound was easily passed into the bladder, and thus were we assured of the success of our efforts.

There was slight hæmorrhage, and the major part of that occurred during the early part of the perineal section. All bleeding stopped, the wound was dressed, and the patient placed in bed.

He rallied readily, and in two hours expressed a desire to urinate. His efforts failed, but brought on quite a severe hæmorrhage. A soft-rubber No. 10 (English) catheter was passed into the bladder and tied there. In forty hours it was removed, cleansed, and replaced, remaining this time thirty-six hours. Now, seeming to cause considerable irritation and pain, it was removed, and a gum-elastic catheter with a double curve was introduced every two or six hours, as required. The third day a No. 13 (English) sound was easily passed through the urethra to the gland. The wound was carefully dressed twice a day, and continued to appear healthy and to rapidly fill with granulations after the third day.

The case passed on in an uninterrupted course for the first ten days, when the patient complained of pain along the tract of the urethra, particularly over the site of the second stricture.

* Read before the Elkhart Medical Society, June 16, 1884.

Upon examination, we found indurated tissue in the space between the second and third strictures.

The swelling was about one inch laterally and two inches in length. It was very tender to the touch, and great pain was experienced in this region upon introduction of the catheter. The pain was so great that I deemed it advisable to tie a catheter into the bladder. This I did, leaving it twenty-four hours, and replacing it by another, which remained twelve hours.

During the next two days the utmost care was required to carry the catheter along the urethra, particularly beyond the site of the second incised stricture. Upon the morning of the fourth day after the operation there was a sudden discharge of pus through the perineal wound, amounting in quantity to six or eight ounces. Simultaneously with this discharge the patient experienced great relief, and in a short time he passed the catheter with ease, and continued to so pass it until his recovery.

Pus flowed from the wound and was discharged from the meatus for ten days, when it entirely disappeared. The swelling gradually subsided, and had entirely disappeared at the end of four weeks from date of operation, and at the end of that time the wound had so far healed as to require but little further attention.

May 16th, thirty-two days after the operation, a No. 13 (English) sound was passed with ease, and has been passed every sixth day since.

Since June 1st the patient has been able to void urine easily in a full, strong stream. He has abandoned the use of the catheter, except, as directed by me, once every day.

On account of the enlarged prostate gland, he is compelled to use a double-curved silver or a Mercier elbow-catheter.

He is now at work, looking well and hearty.

A detailed history of this case is given because of a few points of interest it contains. 1. The manner in which Otis's urethrotome was used in incising the first two strictures, viz.: It was passed from the perineal wound upward. 2. Complete recovery of the patient, notwithstanding the frequent use of the catheter and the formation of an abscess. 3. The complete restoration of the patient's power to micturate after a loss of that power for more than seven years.

PISTOL-SHOT WOUND OF THE HAND; PARTIAL RESECTION OF THE THIRD METACARPO-PHALANGEAL ARTICULATION.

By R. H. WOODWARD, M. D., BRANDON, Vt.,
LATE HOUSE SURGEON TO BELLEVUE HOSPITAL.

JAMES J. WALCH, thirty-four years of age, and a molder by occupation, presented himself for treatment February 22, 1884. He said that four days earlier he had been shot accidentally by a friend who was standing in front of him. The pistol was pointed in such a direction that the bullet must have lodged deeply in the hand. Examination of the injured member disclosed a shot wound on the dorsum of the middle finger, about three fourths of an inch from the metacarpophalangeal joint. There was no other wound about the hand, and manipulation did not furnish any clue to the location of the missile. The dorsum of the hand was quite swollen and red. A probe, passed into the wound, was arrested at about half an inch by a rough substance which was supposed to be shattered bone.

The patient stated that he had been under treatment since the shooting, and that the wound had been probed a number of times. When I first saw him the dressing upon his hand was

so simple that it hardly amounted to a respectable bandage. It seemed to me that the time had arrived for active interference. The third metacarpophalangeal joint had been opened, it was thought, the phalanx was more or less destroyed, and the condition of the hand furnished sufficient reason for suspecting the speedy development of erysipelas. I decided, therefore, to attempt to extract the bullet, and to restore the injured parts to as nearly a natural state as possible. Dr. Henry V. Wildman kindly assisted me during the operation.

Grease and dirt were thoroughly washed from the hand by means of ether, soap and water, and a scrubbing-brush. Elaborate antiseptic precautions were observed from the very beginning until the wound had been dressed. The operation-wounds and their vicinity were irrigated constantly with a 1-1,000 solution of corrosive sublimate during the operation. Since the patient preferred not to take an anæsthetic, ether was not administered, and he was given only one quarter of a grain of sulphate of morphine and an ounce of whisky, although he was on the operating-table about two hours. He did not complain of anything except the sharp-hook retractors, and to them his objection was very mild indeed.

A longitudinal incision was made through the middle of the shot wound on the dorsum of the phalanx, and the extensor tendon exposed. The bullet had perforated the tendon directly in the median line. The tendon was then liberated in such a manner that I was able to draw it aside; and, when that had been done, I found that the proximal end of the phalanx had been seriously damaged by the ball, the metacarpophalangeal joint being opened, and that the phalanx presented also a line of fracture passing obliquely almost from one end of the bone to the other. These two large fragments were held in good position by the soft parts. I scraped out the detritus and injured bone from the cavity where the bullet had impinged upon it, and made a partial resection of the metacarpophalangeal joint. This resection of the joint consisted in the removal of the posterior two thirds of the articulating surface of the phalanx. The condition presented now was, as regards the phalanx, one third of the articular surface, a large cavity, and the shaft of the bone divided into two fragments.

Search for the bullet was begun again at this stage, and a blue spot in the tissues between the second and third metacarpal bones was found. In order to explore the region, it was necessary to enlarge the original incision. It was continued in a curve to the outer side of the injured joint, and between the second and third metacarpal bones to a point opposite their middle. The web between the second and third fingers was cut, but not on its palmar surface. These two incisions were made continuous with each other. Having made these cuts, it was possible to follow the track of the bullet, denoted by a bluish discoloration of the soft parts. The bullet, a No. 32, was found lodged against the second metacarpal bone, midway between its extremities. During this portion of the operation, which was quite tedious, while carefully palpating the hand for signs of the missile, two points were detected, under which, it seemed, the ball might be concealed. On that account a small wound was made in the palm of the hand, which afterward served for drainage, and another, but large cut, was made into the most swollen part of the dorsum of the hand.

The bullet having been extracted, and the soft tissues and the injured bone having been attended to, the capsule of the injured joint was sutured with fine catgut. The wounds were carefully united with continued catgut sutures and drained with several strands of catgut twisted together. Iodoform was dusted upon the wounds, and they were covered with protective. Bichloride gauze, borated cotton, and a splint completed the dressing.

After the operation the patient returned to his home. He did not suffer any pain after the first night. His temperature was never taken, and he did not receive any medicine. On the fifth day the first dressing was removed under antiseptic precautions. The appearance of the hand was perfectly satisfactory; there was no pus, no swelling, no redness. A dressing of the same nature as the first was applied. On the tenth day the catgut sutures were wiped from the wound with a sponge. The wounds had healed by primary union, excepting at a point between the second and third metacarpal bones; at that point there was a small slough. The patient could move the resected joint himself, and there was not a sign of adhesion of the extensor tendon to its surroundings. Passive movements were made and the wound was redressed. The remains of the catgut drains were taken from the wound and the splint was omitted, otherwise this dressing was the same as the preceding. After this the wound was redressed more frequently. The small ulcer remaining from the sloughing healed slowly. Passive motion was given to the joint, both by myself and by the patient. Five weeks after the operation the condition of the parts was as follows: The wounds had healed throughout. The patient could move the resected joint voluntarily through at least one half its normal arc without pain or discomfort. The finger was very nearly as strong as it had been before the accident; the patient had a powerful grip with his injured hand. I thought that still greater movement of the metacarpophalangeal joint could be induced, and proposed more forcible passive motion. The patient requested me to give him ether for this. He was anesthetized, therefore, and I moved the joint pretty freely. The patient was instructed to return for further observation one week later, but I have not seen him since.

Several weeks after my term at the hospital had ended, I received a letter from this patient, in which he informed me that he had been at work, and that his finger was as strong and useful as it had ever been.

A CASE OF HALLUCINATIONS APPARENTLY DEPENDENT UPON MALARIA.

By EDWARD S. DWIGHT, M.D.

I was consulted some time in last October by a man of forty-one, American, of temperate habits, an employee on the Elevated Railroad, who complained of having, during the two preceding months, experienced hallucinations of a rather indefinite character, and which worried him greatly, as he feared that they might be the precursors of insanity. These hallucinations occurred perhaps once a week, attacked him usually when at his work, and were of but momentary duration, although they seemed to him to last for a minute or more. He had great difficulty in recalling the exact nature of these visions, and expressed regret that he was unable to remember and describe them better. The following only he could distinctly recollect: On one occasion he imagined that he saw men in red uniforms passing through the train collecting tickets, which they deposited in leather bags worn at their side; on another, that he suddenly found himself in a "beautiful place," where he beheld a stranger pursuing his wife; that he followed them to see what the man wanted with her, when all at once everything vanished and he found himself, as usual, in the cars; on a third occasion, while seated at the dinner-table, he suddenly imagined himself to be in a green valley, through which a man mounted on a camel was riding.

As I have already said, these hallucinations were of but momentary duration. On the occasion last mentioned the clock

had commenced to strike before the vision appeared, and had not yet ceased when the illusion vanished. He thought that no one had ever remarked his condition when thus attacked, except on this last occasion, when his wife had noticed him to be very pale, and that his face had an unnatural appearance. As soon as an hallucination had passed off he would detect himself looking around to see what had become of the strange people and things he had just seen, and would sometimes find himself debating as to whether he had actually beheld such and such a thing, or whether it was only a reminiscence of one of these dreams.

The attacks were followed by a chill, passing down from the right shoulder to the stomach, to which succeeded nausea. The patient was subject to vertigo, was dyspeptic, and habitually constipated.

His memory was very good. I could obtain no history of insanity in his family, and, one or two symptoms causing me to suspect a malarial influence, I prescribed a course of laxatives, and gave quinine. After two or three days of this treatment all abnormal symptoms disappeared, nor did he have any recurrence of the hallucinations for several months, when a renewal of the same course of medication again put them to flight.

It seemed to me as if in this case a momentary arterial contraction must have occurred, placing the patient's already anæmic brain in the semi-bloodless condition in which the organ is when we doze, and that for the moment, half awake and half asleep, the patient had dreamed while standing erect.

The last time that I saw him he seemed in excellent health, and told me that he was no longer troubled with vertigo or any other cerebral symptoms.

Correspondence.

LETTER FROM STOCKHOLM.

The Social Side of the Eighth International Medical Congress.—Opening of the Congress.—Reception of M. Pasteur.—Dinner given by Professor Panum.—Turkey's Homage to M. Pasteur.—Organizing the Sections.—Reading of M. Pasteur's Paper on Hydrophobia.—Entertainments.—Visiting Historical Localities.

Stockholm, August 23, 1884.

The Eighth International Medical Congress, after a most successful and brilliant meeting, was brought to a close last Saturday night. To give a full history of its proceedings, and of the many incidents which occurred during its progress, would be impossible. From the beginning to the end, each day was filled to its utmost capacity with the work of the sections, special and general, and with the manifold expressions of hospitality, both public and private, extended by our genial and generous entertainers, the Danes. The writer will confine the matter of this letter to a short account of the congress from its social aspect, giving such information as would not be reported in the regular Transactions.

The Congress really began on Saturday evening, August 9th, when an informal reception was held at the Tivoli, a famous evening resort in Copenhagen, and one of the largest and most beautiful of its kind in Europe.

The grand opening of the Congress, held at one o'clock on the day following (Sunday), was largely attended, nearly all of

the delegates having arrived in the city, and was in every respect a notable occasion, graced as it was on the one hand by the presence of a royal family, distinguished alike for its goodness and for the wide influence which it is now exerting upon the political history of Europe, numbering among its members the present King of Greece, the Empress of Russia, and the Princess of Wales, and, on the other hand, by such an assemblage of brilliant, famous, and useful representatives of a noble science as has rarely been brought together.

Looking around upon this remarkable audience, and noting the striking figures, strong countenances, and glittering decorations of those who composed it, the conviction arose that in few other departments of learning could such a company be gathered.

Speeches of welcome were made by Professor Panum and by the secretary of the Congress, Dr. Lange, and the meeting was also addressed by Pasteur, Sir James Paget, and Professor Virchow. The appearance upon the platform of M. Pasteur was the signal for an outburst of applause so strong, spontaneous, and long continued as to have well repaid any man for years of hard work. It was overwhelming, and indicated at once that, in the popular esteem, its subject was the head and front of the occasion. His speech, as was Sir James Paget's, was a model of gracefulness and brevity.

On Sunday evening Professor Panum gave a dinner at the Hotel d'Angleterre to about three hundred distinguished guests. Here, as on other occasions, Pasteur, Paget, Virchow, and Gull were the honored guests. Eloquent speeches were made by all of these gentlemen, Pasteur responding to the toast, "The King of Denmark"; Paget, "To Denmark"; and Virchow, to "The hospitality of the Danes." A striking incident happened during the dinner, when the Turkish Ambassador, gorgeous in the full regalia of his office, approached Pasteur, and, taking his hand in both of his, pressed it reverently to his lips, thus, as the representative of political power, paying to the representative of scientific eminence the highest tribute at his command.

The sections were regularly organized on Monday morning, and the grand event of the Congress, scientifically speaking, took place on Monday afternoon, when, at the great general meeting, Pasteur delivered his address based upon his recent investigations regarding hydrophobia. In this the progress and results of four years of incessant labor were given, simply, clearly, and forcibly, in the space of one single hour. The paper was read with great distinctness, and every word from the beginning to the end was listened to with most earnest attention, until, when the magnificent results attained were announced, the audience expressed itself in enthusiastic applause. This hour alone was well worth the long journey to Copenhagen, and can not fail to be remembered by all present. Monday evening was devoted mainly to dinner parties given by the officers of the various sections to their respective members. The Laryngological Section was delightfully entertained; its members with their lady friends, and numbering in all about one hundred and twenty, being taken upon a beautiful little steamer up the sound to Skodsborg, about an hour's sail from the city, where, nestled against the side of a lovely green bluff, was a handsome summer hotel, at which dinner was served, with Professor Wilhelm Meyer, President of the Sections on Laryngology and Otology, as host. A fine band of music accompanied the party from Copenhagen; the dinner was enlivened by numerous speeches; dancing was indulged in after dinner in a music hall which overlooked the waters of the sound, glittering like silver in the light of the full moon, and finally, after a most delightful evening, the party was escorted back to the steamer to the music of the military band, and in the light of a fine display of fire-works.

Tuesday was taken up with the regular affairs of the Congress, but on Wednesday all business was adjourned, and the whole party, numbering, ladies included, about sixteen hundred, were magnificently entertained throughout the whole day by an excursion to Elsinore and Frederiksborg. At ten A. M. five large and comfortable steamers, gaily decorated with flags, left the principal quay and steamed in single file up the waters of the sound. The day was perfect, both as to atmosphere and temperature, and the sea calm, and in a little over two hours the party was safely landed at the ancient town of Helsingöre or Elsinore, famous for its splendid old castle, the Kronborg, which, rugged and picturesque in architecture, with a tower of extraordinary outline, and surrounded with fine ramparts and broad moats, commands the narrowest part of the sound, here about two miles wide. Shakespeare refers to Elsinore as the residence of Hamlet, and the "Flag Battery," a broad bastion, commanding a beautiful view of the sound, and the shores of Sweden beyond, and upon which the "Dannebrog" or national flag of Denmark is planted, is said to be "the platform of the Castle of Elsinore" where the ghost of the murdered king appeared.

The Kronborg is also the scene of other interesting legends connected with Denmark. Thus, the tutelary genius of the county, Holger Danske, who is familiar to the readers of Andersen's fables, is said to "repose beneath the castle, ready to arise when Denmark is in danger." With the relation of these and many other superstitions, as well as with statements of greater historical accuracy, our genial hosts added greatly to the attractiveness of the place, as we wandered over its halls and towers, and through its intricate system of under-ground passage-ways. An excellent and generous luncheon was served in the castle, and, when the party had been thoroughly refreshed, and several large groups photographed, and when some of us had visited the cairn of stones said to mark the location of Hamlet's grave, and had inspected the corner of the moat in which Ophelia is supposed to have drowned herself, the party took the railway train for another celebrated Danish palace, Frederiksborg, an imposing building, situated upon three small islands in the midst of a lovely lake—the whole presenting a picture of extraordinary beauty. The palace was designed and erected in 1602 by Christian IV, the most talented and famous of the Danish kings, and has, within late years, been superbly decorated inside in the "late rococo" style.

After again driving through the quaint old town, the depot was reached, and the party soon landed back in Copenhagen, after a day of complete enjoyment to all.

Responsibility for Certificates of Insanity.—A case recently reported in the last volume of the "Maine Law Reports" brings up the question whether a physician is responsible in a civil suit for damages for the incorrectness of the certificate given in an examination of a person alleged to be insane, and upon which a commitment was issued. The Court held in a case of this kind that any defects in the form of the certificate should have been rectified by the committing magistrate, and that, if the law had not been fully complied with, the order should not have been made. For any fault of this kind, which was more legal than medical in its character, the magistrate was liable rather than the physician. What the latter was liable for was an untruthful or malicious statement of facts, or the opinion as to insanity based upon them. If the physician should certify to an examination which had not in fact been made, such a breach of professional honor would, no doubt, make the offender liable in a suit for damages. A plain and honest statement of facts, as discovered by the physician, with a carefully prepared opinion based upon these facts, would never subject the physician to the danger of a verdict for damages in case he should turn out to be mistaken.

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NEW YORK, SATURDAY, SEPTEMBER 20, 1884.

THE DROP, THE MINIM, AND THE SPHYGMOGRAPH.

DR. KEENE'S paper, "One Drop," read at a recent meeting of the Buffalo Medical Club, and to be found elsewhere in this issue of the journal, seems to call for some comment as regards those matters mentioned in the caption of this article.

To begin with the sphygmograph. Much may be pardoned in a writer who presents a subject so attractively as Dr. Keene presented the inaccuracies of the method of measuring liquids by drops, and, beguiled by the same persuasive to forbearance, we may forego more than an allusion to the proverbial aversion of hobby-riders to other steeds than their own. We can not refrain, however, from a mild protest against the depreciatory way in which the writer of the paper thought fit to refer to the sphygmograph, and we wonder that at least one member of the club, whose work in sphygmography is well known, should have let the allusion pass without comment. We can only explain that gentleman's silence by supposing that he must have found himself in much the same frame of mind as the rustic, famous in story for his profanity, who—on an occasion when some of his acquaintances, eager to sound the depth of his capabilities in swearing, deliberately watched his cartload of apples roll down a long hill that he was climbing, and called his attention to the fact only when he had reached the summit—dodged the snare that had been laid for him by the simple remark that words were unequal to the situation.

To come to the matter more immediately and directly dealt with by Dr. Keene: no doubt the drop is aggravatingly vague, but the adoption of a particular method of delivering drops would, it seems to us, go far toward reducing their indefiniteness within practically insignificant limits—limits quite as narrow as those that bound the variations of minim-glasses. It would be interesting to compare the graduation of these glasses as furnished by different makers, and we suspect that such a comparison would not show wholly to the disadvantage of the drop. A further drawback to our entire trust in the minim-glass is to be found in the fact that the surface of a column of liquid contained in such a glass does not form a dead level, so that the indication is likely to be read off differently by different observers. Some weight may be attached, too, to the circumstance that, when a certain number of minims have been measured off in the glass, they can not be wholly transferred from it without dilution, and the quantity that remains adherent to the glass varies according to a diversity of conditions, such as the temperature, the viscosity of the liquid, and the shape of the glass.

Liquids can of course be measured accurately, even to small

fractions of a minim, but we doubt if, on the whole, any method will be found more satisfactory for ordinary use than the dropping process. Accuracy might be gained by the simple expedient of weighing instead of measuring, but to unlearn our doses by measure and to learn a fresh set of doses by weight would involve all the vexation that has thus far attended the attempt to bring the metric system into use among us—an attempt which seems to us certain to fail, and, moreover, to be deserving of failure.

PASTEUR AND KOCH.

DECORATED in France, received back in Berlin with enthusiastic demonstrations of admiration, his utterances concerning the comma bacillus published *verbatim* in the Berlin medical journals, given in abstract in those of other countries, and even caught up by the secular press—Koch may fairly be said to be basking in the sunshine of popular esteem. It must be very encouraging, and not a little gratifying, to the votaries of science to see one of their number honored as the world of but a few years ago was wont to honor only military heroes; the spectacle makes a living truth of the dictum that "peace hath her victories no less renowned than war." The world moves, and he who forces the occult energies of nature into the service of mankind, or curbs their power for harm, comes forward with no faltering step to dispute the place of honor with the greatest of slaughterers.

Moreover, it is not to any glamour emitted by Koch personally that the popular homage is due, for Pasteur is likewise borne on men's shoulders. It is well known that he was the lion at the reception given by the King of Denmark to the International Medical Congress, and we have private information to the effect that the paper which he read before the Congress was of such a wonderful nature that men whispered freely to each other that Koch had done well to stay away. Both these great men, then, have no lack of admirers, but each—in truth it must be said—has his detractors. An editorial writer in the "Union médicale" asks, concerning a blockhead who has proposed to treat cholera by drawing the intestinal liquids to the skin by means of pilocarpine, "Is he less of a physician than he who has said: 'Deprived of water, my microbe dies on a slip of glass; therefore the drains of cities should be dried up'?" On the other hand, we have heard it said against Pasteur that he declined to make his processes known, and that, consequently, nobody was able to test his work. Perhaps Paul Pry has visited him too often in the past, with the result of putting him constantly on guard against meddlers.

Pasteur and Koch have not openly put themselves in an attitude of antagonism; let us not urge them on to any such unseemly course. Whatever may prove to be the practical utility of the preventive inoculation of rabies, and whatever rôle may finally be assigned to the comma bacillus in the etiology of cholera, both these men have taken great strides in leading investigation of the lower organisms in the paths of progress; each is playing his part well, and each may be honored without detracting from the other.

NEWS ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending September 16, 1884:

DISEASES.	Week ending Sept. 9.		Week ending Sept. 16.	
	Cases.	Deaths.	Cases.	Deaths.
Typhus	1	0	0	0
Typhoid Fever	56	16	32	17
Scarlet Fever	31	9	27	8
Cerebro-spinal meningitis	4	4	4	4
Measles	39	12	22	11
Diphtheria	17	5	29	17

Cholera Resolutions.—At a meeting of the Chicago Medical Society, held Monday, September 15th, Dr. L. H. Montgomery presented the following resolutions:

Whereas, From present reports and indications in foreign countries, cholera and yellow fever (both pestilential diseases) prevail, and as the latter especially is always assuming a threatening attitude toward us and is not conducive to our national prosperity nor to public health, and should, if possible, be averted with earnest and efficient sanitary measures, and

Whereas, Cholera may make its appearance on this continent ere another twelve months should elapse, and should likewise, if possible, be averted or restricted to the narrowest limits, therefore,

Resolved, That it is the sense of the Chicago Medical Society to have that department of the Government relating to public health recognize the services of able sanitarians who constitute the National Board of Health, for the purpose of co-operating with municipal, State, and other organizations of a similar kind, and that a committee of five or seven members of this society be appointed by the Chair to draft suitable resolutions in behalf of said National Board.

Resolved, Furthermore, that this committee present said resolutions to the Congress of the United States, memorializing that body to make a sufficient appropriation for the purpose of said board for scientific investigation in the prevention and restriction of epidemic, preventable, and pestilential diseases.

We believe this action should be promptly taken at the coming session of our National Legislature, and that a thorough sanitary organization of the nation should be recognized, and with it absolute enforcement of the best means for the protection of her citizens and the improvement of our inter-state sanitary condition.

The New York Polyclinic.—The next session of the Polyclinic will begin on Monday, the 22d inst., with enlarged accommodations and increased facilities for instruction. The new building, recently purchased, has been fitted up with special reference to the comfort and clinical instruction of the classes. Three new rooms, capable of seating in all about three hundred, have been supplied with every convenience; a laboratory for Pathological Histology and Clinical Chemistry, with a capacity for about thirty, has been fitted up; for the Eye, Ear, Throat, and Nose clinics there are thirty-one stalls, supplied with Mackenzie condensers, and the library and waiting-room has been enlarged.

The following clinics will be given weekly during the coming season: Surgical, eighteen; Gynecological, sixteen; Diseases of Children, six; Diseases of the Skin, six; Diseases of the Nervous System, six; Diseases of the Eye, ten; Diseases of the Throat, Nose, and Ear, six; Obstetrical, three; Clinical Chemistry, three; Diseases of the Chest, Diagnosis, and Medicine, eight—in all, eighty-two clinics each week. There are no changes in the corps of instructors.

The managers and faculty are to be congratulated, not only on the purchase of a property so well adapted to their purposes, but also on the marked success which has attended their efforts.

The Cartwright Prize of the Alumni Association of the College of Physicians and Surgeons of New York is open to the competition of alumni of any medical college.

It consists of a prize of *five hundred dollars* to be awarded to the best medical essay submitted upon any subject the author may select. The award will be paid as soon as the successful article shall have appeared in print.

If no one of the competing essays be deemed sufficiently meritorious, the prize will not be awarded.

An essay, in order to be held worthy the prize, must contain the results of original investigation made by the writer.

An award of this prize will be made at Commencement, 1885. Essays must be sent to a member of the Prize Committee before April 1, 1885.

Competing essays must each be marked with a device or motto, and accompanied by a sealed envelope, similarly marked, containing the name and address of the author.

R. W. AMIDON, M. D., 18 West Twenty-first St., *Chairman*,

ROBERT ABBE, M. D., 32 East Twenty-fifth St.,

WALTER MENDELSON, M. D., 209 West Forty-sixth St.,

Committee on Prize Essays.

The Late Dr. Robert J. Heinmüller.—At a special meeting of the members of the Fourth Division of the Health Department of the City of New York, held September 2, 1884, the following resolutions were adopted:

Whereas, We have learned with deep sorrow and regret of the death of our late colleague, Dr. Robert J. Heinmüller, therefore be it

Resolved, That in the death of Dr. Heinmüller this department has lost one of its most faithful and efficient officers, and we, his associates, a friend whose many noble qualities of mind and heart had endeared him to each and all of us. And the profession has lost one of its most promising young members.

Resolved, That we tender to the family of the deceased our deepest sympathy in their great bereavement.

Resolved, That a copy of the proceedings of this meeting be sent to the family, and to the medical journals for publication.

J. B. TAYLOR, M. D., }

J. B. LINEHAN, M. D., }

GEORGE S. CONANT, M. D., *Committee.*

J. N. MCHESNEY, M. D., }

J. C. CONOVER, M. D., }

A New Italian Medical Journal, devoted especially to diseases of the genito-urinary organs, is, according to "Ann. des mal des org. gén.-urin," to be established in Pisa.

The Death of Professor Cohnheim, whose contributions to our knowledge of the pathology of inflammation are well known, is reported to have taken place at Leipzig on the 16th of August.

The Mississippi Valley Medical Association (formerly the Tri-State Medical Society) will hold its next meeting in Representative Hall, State House, Springfield, Ill., on Tuesday, Wednesday, Thursday, and Friday, the 23d, 24th, 25th, and 26th inst.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from September 7, 1884, to September 13, 1884:*

GREENLEAF, CHARLES R., Major and Surgeon. To conduct a detachment of recruits to the Department of the Columbia,

and, upon completion of this duty, rejoin his station, Columbus Barracks, Ohio. S. O. 210, A. G. O., September 6, 1884.

GORGAS, W. C., First Lieutenant and Assistant Surgeon. Assigned to duty at Fort Randall, Dakota Territory. S. O. 98, Department of Dakota, September 5, 1884.

EGAN, P. R., First Lieutenant and Assistant Surgeon. When relieved by Assistant Surgeon Fisher, to report at Fort Lowell, Arizona Territory, for duty as post surgeon. S. O. 82, Department of Arizona, September 2, 1884.

MACAULEY, C. N. B., First Lieutenant and Assistant Surgeon. Assigned to duty at Fort Sisseton, Dakota Territory. S. O. 99, Department of Dakota, September 6, 1884.

FISHER, W. W. R., First Lieutenant and Assistant Surgeon. Assigned to duty at Fort Apache, Arizona Territory, relieving Assistant Surgeon Egan. S. O. 82, C. S., Department of Arizona.

EWING, CHARLES B., First Lieutenant and Assistant Surgeon. Assigned to duty as post surgeon at Fort Stanton, New Mexico. S. O. 177, Department of the Missouri, September 6, 1884.

MCCLAW, W. D., First Lieutenant and Assistant Surgeon (recently appointed). To report in person to the commanding general, Department of the Missouri, for assignment to duty. S. O. 209, A. G. O., September 5, 1884.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending September 13, 1884:*

HEYL, T. C., Surgeon. Relieved from the Adams, September 8, 1884, and ordered to the receiving ship Independence, Mare Island, Cal.

Society Meetings for the Coming Week:

MONDAY, September 22d: Medical Society of the County of New York.

TUESDAY, September 23d: New York Dermatological Society; Medical Society of the County of Lewis, N. Y.; Jersey City Pathological Society (private); Mississippi Valley Medical Association (Springfield, Ill.—first day).

WEDNESDAY, September 24th: New York Pathological Society; The American Microscopical Society of the City of New York; Auburn, N. Y., City Medical Association; Mississippi Valley Medical Association (second day).

THURSDAY, September 25th: New York Academy of Medicine (Section in Obstetrics and Diseases of Women); Materia Medica Society, New York; Harlem Medical Association of the City of New York; New London County Medical Society (New London, Conn.); Mississippi Valley Medical Association (third day).

FRIDAY, September 26th: Yorkville Medical Association (private); New York Society of German Physicians; New York Clinical Society (private); Mississippi Valley Medical Association (fourth day).

Letters to the Editor.

WHAT WE REALLY KNOW ABOUT ASIATIC CHOLERA.

NEW YORK, September 1, 1884.

To the Editor of the New York Medical Journal:

SIR: I have been exceedingly interested in Dr. Bartlett's suggestive article in your issue of August 30th. But a sufficient

number of well-established facts are known to account for all the peculiarities and vagaries of cholera.

1. Cholera has existed in Hindostan for centuries. It was found there by Vasco da Gama in 1496, and there is a perfectly authentic history of it from that time down to the present.

2. It is never absent from India, from whence it has been conveyed innumerable times to other countries. It has never become domiciled in any other land, not even in China, parts of which lie in the same latitude; nor in Arabia, to which country pilgrims go every year from India; nor in Egypt, nor Persia, with which communication is so frequent; much less in any other part of the world. Canton in China, Muscat and Mecca in Arabia, lie nearly in the same degree of latitude as Calcutta, in which cholera is always existent; yet these places only have cholera occasionally, and then only after arrivals of it from Hindostan.

3. The arrival of cholera in other countries is often involved in some easily removable obscurity, which is deepened only by the ignorance and want of veracity of quarantine and other officials.

4. Cholera is almost always preceded by a premonitory diarrhœa, which lasts from one or two to three or four or more days before urgent and characteristic symptoms show themselves. Of 6,213 cases, no less than 5,786 had preceding diarrhœa. The sufferers from this sow the germs of the disease in numerous, often distant and obscure places, to which no choleraic person is supposed to have come.

5. The discharges swarm with infective bacteria of various kinds, some of which, especially Koch's comma bacilli, seem to be specific.

6. The disease has been reproduced in men and some few animals by their swallowing the discharges.

7. The discharges, according to the experiments of Thiersch, Burdon-Sanderson, and Macnamara, are not virulent and poisonous for the first twenty-four hours; on the second day eleven per cent. of those who swallow them will suffer; on the third day, thirty-six per cent.; on the fourth day, ninety per cent.; on the fifth day, seventy-one per cent.; on the sixth day, forty per cent.; and after that the discharges have no effect—the bacteria die, and the poison becomes inert.

Professor Robin reproduced cholera in dogs, and the celebrated dog Juno died of cholera in Egypt last year. Professor Botkin, of the University of Dorpat, reproduced cholera in dogs by the subcutaneous injection of the urine of cholera patients. Even if the comma bacilli are not found in the urine, other bacteria are; and even Koch supposes that they secrete a virulent poison similar to that of some insects, which may be absorbed into the blood and escape from the kidneys.

8. Some of the manners and customs of the Hindoos are very peculiar. They always defecate upon the open ground, and will not use privies or latrines. This is a matter of religious obligation with them. It is also obligatory upon them to go to stool every morning; to use the left hand only in wiping themselves; to wash their fundaments after stool; to wash their whole persons and clothing every day; and, finally, also to rinse their mouths with water, and this they often do after washing in foul tanks, or still fouler pools of water. On steamships, where tubs of water were provided for washing their fundaments after defecation, Surgeon-General De Renzy saw many Hindoos rinse their mouths with the same water.

9. The population of Hindostan is nearly three hundred millions, and at least one hundred million pounds of fecal matter is deposited on the open ground every day, and has been for centuries.

10. Much of this foul matter is washed by rains into their

tanks and pools of water, which they use indiscriminately for washing, cooking, and drinking purposes.

11. The poison of cholera has repeatedly been carried in soiled clothing packed in trunks and boxes, and conveyed to great distances.

12. Articles of food, even bread and cake, as well as apples, plums, and other fruit, handled by persons in the incipient stages of cholera, have been known to convey the disease.

13. The number of epidemics produced by cholera discharges getting into drinking water are almost innumerable, and those from contaminated milk are not few.

14. The first case of cholera is generally counted from the first fatal one, whereas this is almost always preceded by non-fatal ones, which have escaped notice. And each subsequent fatal case is interwoven by one, or several, or even many, non-fatal cases. If the string of a row of beads is broken, and the beads scattered everywhere, it would be just as improper to say that they had never been upon a string as to say that, because all the fatal cases of cholera can not be traced to equally fatal ones, no connection ever existed between them.

These points are necessarily stated categorically, but every one can be proved, if proof is called for. The numerous and very large pilgrimages of the Hindoos must not be forgotten.

JOHN C. PETERS, M. D.

83 MADISON AVENUE.

Proceedings of Societies.

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

THE thirty-third annual meeting was held in Philadelphia, September 4 to 10, 1884, the President, Professor J. P. Lesley, of Philadelphia, in the chair. We give short abstracts of only a few of the more important papers having a bearing upon medicine.

Thursday—First Day.

The meeting was called to order by the retiring president, Professor C. A. YOUNG, of Princeton, N. J., who, after an invocation by Rev. HENRY C. MCCOOK, D. D., of Philadelphia, resigned the chair to the President-elect. Addresses of welcome were made by His Excellency ROBERT E. PATTISON, Governor of Pennsylvania, and by His Honor WILLIAM B. SMITH, Mayor of Philadelphia. After the transaction of general business, the General Session adjourned and the various sections were organized.

Friday—Second Day.

Section in Physics.

Sensitiveness of the Eye to Colors of a Low Degree of Saturation, by Professor E. L. NICHOLS, of Kansas:

For the purpose of determining the minimum degree of saturation at which various pigments become perceptible to the average observer, red lead, chromate of lead, chromic oxide, and ultramarine were each mixed with white, and a series of compounds formed in white; the proportions of the pigment to white were 1:1, 1:2, 1:4, 1:8, 1:16, etc. This process was carried on until the mixtures obtained showed no trace of the hue of the pigment. The four series of mixtures thus formed were bottled and labeled. They were mingled indiscriminately, and the ability of observers unacquainted with the code of labels to arrange the colors according to hue and shade was determined. Fifty-four persons of both sexes were tested in this

manner. From the success of these observers in arranging the colors, two sets of statistics were obtained. The first and most important dealt with the sensitiveness of the eye to the presence of small amounts of coloring matter in mixtures consisting mostly of white.

The amount necessary to impart a recognizable hue to a white powder was found to be almost incredibly small. It differed with the nature of the coloring matter and with the individual observer. Eight of the fifty-four observers (five males and three females) could detect three parts of yellow in one hundred million parts of white. Two observers (both females) could not perceive the colors in mixtures containing less than one hundred and ninety-eight in one hundred millions. The following table gives the average sensitiveness of the two sexes and of all the observers:

Number of Parts of Coloring Matter that must be mixed with One Hundred Million Parts of White to affect the Tint of the Compound.

	Red lead.	Lead chromate.	Chromic oxide.	Ultramarine.
Average for 31 males.....	15.9	17.3	817.7	148.5
Average for 23 females.....	39.8	33.2	913.6	108.1
Average for both sexes.....	25.2	23.9	864.3	126.5

As will be seen, the male observers showed measurably greater sensitiveness to all colors excepting blue, and their superiority increased with the wave-length, being greatest for the red. Both sexes showed a marked deficiency in their power to detect the presence of green, a result possibly of the continued exposure of the eye to that color (in foliage, etc.), and consequent enfeeblement of the nerves corresponding to green. For purposes of illustration merely, a place in the spectrum was assigned to each pigment by the author, and curves were drawn to show graphically the sensitiveness of the eye as a function of the wave-length and to exhibit the peculiarities of this function in each sex and in the case of certain individuals.

In the detection of shades of saturation, women showed a decided superiority in all parts of the spectrum, and both sexes were most successful with the color (green) for which the eye had been found most deficient in sensitiveness.

This would seem to indicate that the power to perceive colors of very low saturation depended upon the delicacy of the eye, while the ability to detect differences of shade was the result of practice.

Chemical Section.

The Opening Address, by Professor JOHN W. LANGLEY, of Ann Arbor, Mich., vice-president of the section, was a historical review of the subject of chemical affinity and the quantitative measurement of affinity, and a statement of existing problems. These he concluded must be solved by accurately measuring the time element in chemical action in determining the rate of speed of chemical combination.

Fish as an Article of Food.—Professor W. O. ATWATER, in his paper on the chemistry of fish, contended that it had been shown that fish was as readily digested as flesh meat. Oysters, however, he regarded as far less nutritious than fish.

Microscopical Section.

Some New Microscopical Devices.—Dr. R. H. WARD, of Troy, N. Y., described the following new forms of microscopical apparatus:

1. A new illuminating arrangement called the iris illuminator, which consisted of an iris diaphragm with decentering adjustment, combined with an Albe illuminator or other condensing system of lenses in such manner that the illuminating

pencil of sight could be accurately graduated, not only in an axial, but also in an oblique direction.

2. A new lens-holder with long arm and with fine adjustment, with which magnifying lenses of either low or high power could be firmly supported and accurately focused at sufficient distance from the supporting pillar to be used in examining mounted herbarium specimens, or other objects widely distributed on the laboratory table.

Recent Studies on the Theory of the Microscope, and their Practical Results as regards the Use of the Microscope in Scientific Investigations.—Mr. R. HITCHCOCK, of Washington, D. C., read a paper with this title. [The full text of Mr. Hitchcock's paper will appear in a future number of this journal.]

Description of the Schroeder Camera Lucida.—Mr. HITCHCOCK described the construction of this instrument, and illustrated the manner of using it. It was, in his opinion, superior to any other form of camera lucida in that the point of the pencil could be distinctly seen, even when the illumination of object and paper was not carefully adjusted. The pupil of the eye was not divided over a reflecting prism, as in the instrument with two prisms by Zeiss, but considerable latitude in the position of the eye was allowed. The field of view was large, and the image of the object was seen projected well out from the foot of the microscope. The pencil was seen directly, the image of the object by reflection. The principle was an adaptation of the binocular prism devised by F. H. Wenham, for use with high-power objectives.

Biological Section.

The Influence of Oxygenated and Un-oxygenated Blood, as well as of Blood in Various Degrees of Dilution, on the Heart of the Frog and Slider Terrapin.—A paper with this title was read by Dr. H. G. BEYER, of the Navy, tending to prove beyond all doubt the highly stimulating influence of well-oxygenated blood upon the heart's action and on its contained nervous apparatus, as well as the unmodified depressing influence on the same of deoxygenated or asphyxiated blood.

To this report a number of experiments were appended, proving these points conclusively. This paper also contained a description of an improved method for working with the isolated heart of the terrapin, especially valuable for pharmacological experiments.

The Existence and Dorsal Circumscription of the Porta (Foramen of Munro) in the Adult Human Brain.—Professor BRIE G. WILDER, of Ithaca, N. Y., read a paper in which he stated that he had been able to determine the existence and dorsal boundary of the porta in all the human brains examined for that purpose, including several adult as well as fetal and young brains. Some of these were prepared by the process of continuous celiacal injection with alcohol. The photographs shown were believed to be the first ever made of "the foramen of Munro." In the enlarged one the orifice was seen to be bounded caudad by the thalamus, cephalad by the forniculum, ventrad by the continuity of the two, and dorsad by the endyma reflected from the parts named upon the intruded portplexus. This demonstration of the dorsal limit of the porta was equally a demonstration of the ventral limit of the rima (great transverse fissure), with which the porta was usually but erroneously made continuous in both figures and descriptions.

Monday—Third Day.

Biological Section.

Experimental Researches on the so-called Thought-Transference was the title of a paper, by W. F. BARNETT, which

showed that perhaps nine tenths of the cases of alleged mind-reading were simply muscular transferences, but that there was an undoubted residuum that could only be accounted for by the action of mind upon mind.

Objections to some Commonly Accepted Views of Heredity.—Mr. ALPHEUS HYATT, of Boston, read a paper in which he said that heredity had no need of the gemmule hypothesis, or pangenesis, but could be equally well understood upon the supposition that the nuclei of cells were the immediate agents of the transmission of characteristics. He then presented the case of a man in Maine who resembled the mother on one side and the father on the other as an illustration of his theory, and contested Professor Brooks's position with regard to heredity.

Researches on Growth and Death was the title of a paper by Mr. C. S. MINOT, of Boston, whose investigations had for their purpose to contribute to the solution of the problem of the effects of age upon organisms, and the manner in which age caused death. He dealt first with the problem of growth, the most obvious of the effects of age, and presented the results of his experiments, covering over three years and including nearly ten thousand measurements of the weights of growing animals, chiefly Guinea-pigs. These statistics would give us a new insight into the matter, because they covered the whole period from birth to maturity, thus enabling us to calculate the rate of growth for the entire post-fœtal interval. Hitherto the actual increments of growth had been compared directly with one another, but, if we adopted a new and correct method of comparison, we should reach a conclusion, he believed, of great importance—viz., that the rate of growth steadily diminished from birth onward, so that the loss of power began at once and continued until it culminated in death. The new method consisted in calculating the average daily increment during a given time in percentages of the weight at the beginning of that time. The series of percentages thus obtained might legitimately be compared with one another and yield the result he had given. Another manner of demonstrating the same relation of potential power at different ages was to calculate by interpolation the length of time necessary to add ten per cent. to the weight. It was found that the older the animal was the longer it required to increase ten per cent. His measurements by various methods of grouping threw much light on the loss of weight in some animals immediately after birth, on the relative growth of males and females, on the effects of reproduction on growth (which were the reverse of what Herbert Spencer had asserted), on the dependence of the size, number, sex, and weight of the young upon the age of the mother, the season of the year, etc., and on the determining causes of sex. These subjects would all be treated of statistically. He wished to discuss particularly the bearing of the results obtained on the general theory of senescence, and to criticize from the new standpoint the views on death recently emitted by Weissmann, Goette, Buetschli, and others. In this connection it would be necessary to attack the current conceptions of animal individuality. In the course of this discussion he would show that the results obtained in regard to the growth and other phases of development of man agreed closely with the deductions from his own experiments. In conclusion, he wished to refer briefly to the bearing of our present knowledge of senescence upon the theory of life and the relation of life to a material substratum.

Do the Cerebellum and the Oblongata represent Two Encephalic Segments, or only One?—In a paper with this title, Professor WILDER remarked that, since the publication of von Baer's "Entwicklungsgeschichte," in 1837, the segmental constitution of the brain had been more or less distinctly admitted by most writers who had treated of the organ in the light

of embryology and comparative anatomy. Further investigations in embryology and comparative anatomy were needed to place any segmental formula of the brain upon a satisfactory basis, and the objections made by Spitzka should not prevent us from employing von Baer's interpretation as a working hypothesis.

Microscopical Section.

Electric Illumination for the Microscope, with Practical Illustration, was the title of a paper read by Mr. W. H. WALMSLEY. He used a Swan lamp both for opaque and for transparent objects, and an objective of one fourth to one fifth inch.

Tuesday—Fourth Day.

Biological Section.

Ethidene Dichloride as an Anæsthetic.—Professor J. G. McKENDRICK, of Glasgow, Scotland, read a short account of the physiological action of ethidene dichloride ($C_2H_2Cl_2$) on the lower animals and on man, showing wherein it differed from the action of chloroform and ether, especially as regarded its action on the heart, on blood-pressure, and on respiration.

Preliminary Notes on the Delicacy of the Special Senses.—Mr. E. H. S. BAILEY, and Mr. E. L. NICHOLS, of Lawrence, Kansas, furnished a paper embodying the results of researches to test the delicacy of the special senses, particularly sight, smell, and taste, in persons of different nationalities and both sexes. One of the authors had presented the result of experiments on the "sensitiveness of the eye to colors of a low degree of saturation." To test the delicacy of the nerves of taste, solutions of sulphate of quinine, cane-sugar, common salt, sulphuric acid, and baking soda were employed. A series of dilute solutions was prepared in which each sample was of half the strength of the previous one. The result of the tests thus far made was as follows:

	Sulphate of quinine.	Acid.	Salt.	Sugar.	Alkali.
Average of 29 males, one part in	152,000	1,760	640	208	48
Average of 20 females, one part in	144,000	2,560	760	288	60
Average of both sexes, one part in	148,000	2,060	700	248	54

In all cases except the detection of the bitter substance the females were above the average. The tests for the delicacy of the sense of smell were being made in a similar way, using as test solutions oil of cloves, nitrite of amyl, extract of garlic, solution of bromine, and cyanide of potassium. These solutions were diluted in a similar way to those above described, and, although tests had been made with only thirty-four persons, they pointed strongly to the inference that the sense of smell was more acute in males than in females. Many could not distinguish between a strong solution of cyanide of potassium and pure rain-water.

Wednesday—Fifth Day.

Biological Section.

Experimental Research relating to the Etiology of Tuberculosis.—Dr. G. M. STERNBERG, of the army, read a paper in which he stated that he had repeated Koch's inoculation experiments, and was able to confirm him as to the infectious nature of tuberculosis, and also as to the presence of the bacillus discovered by him in the tubercle nodules in the lungs and in tuberculous glands of inoculated rabbits and Guinea-pigs (inoculated with the sputum of phthisical patients). The experiments

of Formad, of Philadelphia, in which he professed to have produced tuberculosis in rabbits by the introduction into the cavity of the abdomen of finely powdered inorganic material, had also been repeated with an entirely negative result so far as the production of tuberculosis was concerned. The conclusion was therefore reached that the bacillus of Koch was an essential factor in the etiology of tuberculosis.

An Induction of the Law of Repetition, or the Growing Principle of Nature, from Observations of the Growth of Character in Three Infants, by VIRGINIA K. BOWERS, was a paper intended to show that character was developed by repetition or habit from certain universally implanted tendencies and faculties of the human race.

Dr. H. P. BOWDITCH, of Boston, gave a brief description of some **Experiments on the Action of the Vaso-motor Nerves of the Leg**. The experiments were made on cats curarized and kept alive by artificial respiration. The sciatic nerve was divided, and stimulated peripherally with induction-shocks of varying intensity and rhythm. The leg of the animal was inclosed in a glass vessel provided with a rubber collar fitting closely round the shaved and greased skin of the thigh. This vessel could be filled with water of any desired temperature, and the air-space in the upper part of the vessel being in communication with a delicate Marey's drum, the changing volume of the leg was recorded upon the surface of a cylinder covered with smoked paper and revolving once an hour. The results thus far obtained showed that slow, rhythmical stimulation (once in a second) caused dilatation, as a rule, while rapid stimulation (twenty times in a second) generally produced contraction of the vessels of the leg. The contraction occurred very promptly upon the beginning of the stimulation, and ceased when the stimulation ended, while the dilatation was produced much more slowly, reaching its maximum usually after the end of the stimulation. The effects of varying temperature and of variations in the length of time elapsing between the section of the nerve and the stimulation would be subjects of future investigations.

CHICAGO MEDICAL SOCIETY.

Meeting of September 1, 1884.

The President, Dr. A. K. STEELE, in the chair.

Remarks on Aneurysms was the title of a paper read by Dr. J. A. ROBISON. After some remarks on the etiology, pathology, and diagnosis of aneurysms, the reader said that the general principles governing the treatment had been to prohibit the patient from taking much exercise, to secure as nearly as possible absolute rest, and to restrict the diet. When the heart's action was tumultuous, cardiac sedatives were to be given, and such symptoms as dyspnoea, pain, etc., had to be met with appropriate palliatives. The first attempt at specific treatment for internal aneurysms was employed many years since by Albertini and Valsalva, and had been known as Valsalva's method. It consisted in weakening the patient by repeated blood-lettings, and by gradually diminishing his meat and drink, till only half a pound of pudding was taken morning and evening, with a measured quantity of water, so that at last the patient was so exhausted that he could not lift his hand from the bed, in which he was ordered to lie from the commencement of the treatment. When this stage was reached, the amount of nutriment was increased until the patient's strength was restored. This plan of treatment had not yielded the beneficial results which were anticipated. In our day it would be regarded as barbarous if carried to the extreme.

A modification of this method, consisting of enforcing absolute rest, and lessening the food and drink so as to diminish the

quantity, but not the physiological quality, of the blood, had benefited a number of patients if it had not entirely cured them. While some physicians had refused to employ the depleting treatment, they had resorted to measures fully as severe. Dr. Murchison and Dr. Moore, of England, had recommended, and in one case tried, the introduction of fine wires into the aneurysmal sac, on the theory that the large amount of surface exposed to the circulating fluid would produce coagulation of the fibrin. In the case referred to, they introduced twenty-six yards of fine iron wire into the aneurysmal sac, and, it was needless to say, the treatment was unsuccessful, although they contended that the result obtained had demonstrated that the principle was sound, and that further experiments were justifiable.

A much less dangerous and probably more efficient mode of treatment was by electrolysis. Pravaz was the first to use electrolysis for reducing external aneurysms, and Cincelli and others had applied it to internal aneurysms, but of eight patients with thoracic aneurysm only one was benefited. Only one with abdominal aneurysm was cured, and this patient died from rupture of the sac on account of premature exertion. The results obtained from the use of the galvano-puncture had not justified us in expecting much from that method. Professor Langenbeck had published accounts of two cases which he stated he had cured by hypodermic injections of from half a grain to three grains of Bonjean's watery extract of ergot every three days. Balfour had tried this method frequently, but without any success. Pressure as a mode of treatment was wholly inapplicable to thoracic aneurysms, and nearly so to abdominal. Dr. Murray had recorded a case of the latter in which pressure on the aorta for five hours, the patient being under chloroform, had been successful.

In the treatment of internal aneurysms, it was conceded by Flint and Bramwell, and insisted on by Balfour, that iodide of potassium was the only drug which offered any hope of cure, and in every case it would relieve the distressing symptoms. The latter author said: "Of all the various modes of treating internal aneurysm, there is not one hitherto mentioned which is not attended with considerable risk or danger except Mr. Tuffnell's plan of perfect rest, while the advantages to be derived from some of them are, to say the least, very problematical."

Dr. Robison maintained that the treatment by iodide of potassium was perfectly safe and certain to afford relief, although relief was not always to be got instantaneously. It relieved the pain and other symptoms more rapidly and more effectually than any other treatment, apart even from the powerful agency of the recumbent posture. The relief to the pain and other symptoms was so great and so speedily obtained, usually from the action of the drug alone, that it was often difficult to get the patient to submit to any restrictions.

He had employed this method of treatment during the last eight years, in a very considerable number of cases, with unvarying success so far as the relief to symptoms was concerned, and with such favorable results as to retarding the further progress of the case—even in some cases promoting an apparent cure—as certainly to stamp this treatment as one of the most efficient hitherto proposed. Balfour related the history of twelve cases treated by this method with the following results: The symptoms, such as pain, dyspnea, etc., were relieved in every case; the physical signs of aneurysm were diminished in seven cases; pulsation of the tumor ceased in two cases, diminished in four, and was not apparent from the commencement in six. The aneurysmal tumor disappeared in three cases and diminished in five, the *bruit* disappeared in two cases and diminished in two, but in two it had never existed. Five of the patients were so relieved that they could work; four were discharged at their

request, feeling well; one absconded, and the result of the treatment was not known. Five were termed cured, and seven were relieved. One of the twelve cases referred to was an aneurysm of the innominate artery, which was cured, and Balfour professed to have cured several cases of aneurysm of this artery.

One of the four patients discharged at their own request was under treatment three different times, being discharged twice at his own request, but died suddenly while under the third course of treatment, and the autopsy revealed an aneurysm of the aorta which had ruptured into the lower lobe of the right lung.

One of the twelve cases was diagnosed as a weeping aneurysm, implicating the origin of the left carotid, and communicating by a small opening with the left bronchus. The patient on admission expectorated arterial blood, but this soon ceased and he was discharged cured. The writer related the following case, in which, while he was not so enthusiastic as Balfour, he yet attributed the prolongation of the patient's life and his comparative comfort to the use of the remedy:

John H. C., aged forty, a blacksmith, was first seen in March, 1883. Had had attacks of inflammatory rheumatism several years before. In February, 1883, he was attacked with severe pains in the precordial region, and was treated by his physician for rheumatism for some weeks, when Dr. J. P. Ross saw him and diagnosed aneurysm of the aorta. At this time he had a good deal of dyspnea, some hoarseness, and quite a little difficulty in swallowing solid food. When he was fatigued the pains in his chest were excruciating. No tumor was perceptible, although there was pulsation in the upper sternal region, with dullness over the area of pulsation. Two months afterward there was a swelling in the upper sternal region, at the junction of the left first and second ribs, of about the size of a silver dollar. A very slight *bruit* was heard. The voice was very husky, and the difficulty of deglutition had increased, until now the patient could take no solid food whatever. He had become emaciated and was losing strength very rapidly.

He was ordered to lie in bed continuously, and was given fifteen grains of iodide of potassium three times daily, gradually increasing the dose until signs of iodism appeared.

It was truly remarkable how soon, after this plan of treatment was inaugurated, the patient expressed himself free from pain and the distressing symptoms from which he had suffered. He persevered in this way until May, when he said he was so well and so weary of the bed that he would like to sit up. Leave was granted. A few weeks after, the writer was surprised to see his patient walk into his office. He (the man) complained of nothing; he was, however, cautioned against such rash experiments, for his condition was as follows: The continued pulsation of the tumor against the chest wall had produced absorption of a large portion of the manubrium and an inch of the inner portion of the left first and second ribs. Consequently the pulsations of the tumor could be felt through the chest wall at a point where only soft tissues intervened. No *bruit* was discernible.

On laryngoscopic examination, there was found complete paralysis of the left vocal cord. His voice was anserinous.

During all these months he had been taking the iodide of potassium without any disturbing effects until now, when he complained of symptoms of iodism. He was allowed to discontinue its use.

From the date of this office visit, the patient rapidly grew worse. He quickly became emaciated, the dyspnea and dysphagia increased, and finally he died of asthma July 19, 1884, nearly eighteen months after he came under the writer's observation.

The specimen was presented, with an account of the autopsy. On opening the thorax, a large aneurysmal tumor was seen behind the sternum, about five inches in diameter. Friable adhesions of the sac to the sternum were broken up when the sternum was removed. Absorption of a large portion of the sternum and of the left first and second ribs had taken place. The heart and pericardium were normal. There were adhesions between the aneurysmal sac and the left lung, which was pressed upward and backward and collapsed.

The aortic valves were found roughened; the arch of the aorta was dilated, and at the anterior part of the arch, between the origin of the innominate and that of the left carotid arteries, an oval opening, one inch by one and a half, led into the sac of the aneurysm. Through this opening the walls of the aorta were continuous, forming the wall of the aneurysm. The tumor was firm, being composed of coagulated fibrin.

Dr. E. F. INGALLS had been consulted last April by the patient whose case had just been presented in the paper. He found all the symptoms present that Dr. Robison had described. He cited a case of aneurysm of the abdominal aorta that he had treated five or six years before, in which he gave iodide of potassium in large doses, and continued the treatment two thirds of the time for two years. There was cessation of the *bruit* and of the pain, and the size of the tumor had become reduced fifty per cent. He saw the case recently, and there had been no return of the symptoms. He also stated briefly the points of another case, similar in every respect to the first one, that he had treated three or four years before by the iodide of potassium, which soon relieved the distressing symptoms. In a case of thoracic aneurysm that he had treated three years before, twenty grains of the iodide three times daily failed to have much effect, and the patient died suddenly soon after he saw him. The speaker was at present treating a case of abdominal aneurysm in which the enlargement had been reduced fifty per cent. He certainly indorsed the iodide-of-potassium treatment, but would ask how long the remedy could be given continuously before it was likely to have any injurious effect on the mucous coat of the stomach or kidneys? He had treated a case of stricture of the trachea, commencing by giving daily 480 grains of the iodide, freely diluted, for some time, then lessening the dose to 60 grains three times a day for six months. At the expiration of this time the bands of constriction had been absorbed and his patient recovered; but, as a precaution, to prevent any symptoms of it returning, he had the patient continue the iodide in five-grain doses three times a day.

Dr. JOHN BARTLETT cited a case of general chronic bronchitis and asthma, in a man seventy years of age, in which it was stated that the man had had consumption for fifty years, and had been under his observation during the past eight years, during which time he had taken 8 grains of iodide of potassium three times daily (without omitting a day). The man had steadily grown fatter and stronger under this treatment.

Dr. ROBISON concluded by stating that Balfour had abandoned the large doses of the iodide that he formerly gave, and instead now gave 15 or 20 grains three or four times daily for a while; then, if the pulse became quickened or the heart irritable, he stopped the treatment for a time.

The Treatment of Asiatic Cholera as pursued in Southern India.—Dr. H. M. SCODDER read a paper on this subject, in which he favored a particular mode of treatment, based upon nine years' practice in Southern India, during which it was his lot to pass through four epidemics of the plague, he being the only European physician in a town of nearly 50,000 inhabitants. He was at the head of a district hospital, supported by the English Government, and treated a large number of cases. One of the severest of these epidemics occurred during the famine of 1877 and 1878. He was at that time in medical charge of a large, inclosed famine-relief camp, containing over 5,000 persons. Often there were as many as 300 at a time sick with the disease in the hospital sheds, with a death-roll during the height of the epidemic of over 50 per diem. In this camp the writer had opportunities of trying, on an extensive scale, many different remedies and the various modes of treatment, and comparing the results. We will omit enumerating this long list, as also the discussion of the value of the numerous and various forms

of treatment that had been advocated in the East (as was stated by the writer), as our readers are sufficiently familiar with them. With reference to the contagiousness of the disease, the reader considered that cholera was infectious and also *somewhat* contagious, though not highly contagious, or readily communicable by personal association with the sick, as was the case with small-pox and measles. The noxious power of the cholera germ or virus (whether it was Dr. Koch's microbe or something else) seemed to be more powerfully exerted some time after it had escaped from the body of the patient than when it was freshly passed. Careful observation and experience in the epidemics he had passed through, and the world over, seemed to establish this fact. Whether the disease was contagious, or highly contagious, however, seemed to be a vexed question, and remained yet to be decided. His experience in four epidemics, and the careful study of the history of India epidemics, had led him to believe that the attendants, and those who came into frequent and close contact with cholera patients, were somewhat more apt to contract the disease than those who did not.

For purposes of treatment, he divided the course of cholera into the following stages:

1. A period of prodromes, or prodromic stage.
2. A first stage, or stage of diarrhea, or cholérine.
3. A second stage, or stage of invasion.
4. A third stage, or stage of collapse (algid stage).
5. A fourth stage, or stage of reaction.

This last stage might be succeeded by a typhoid condition, or cholera-typhoid state, or the patient might pass directly into a state of convalescence. In the prodromic stage, manifested by lassitude, mental depression, chilliness, nausea, and abdominal discomfort, give ten- or fifteen-drop doses of spirit of camphor, in dessertspoonfuls of hot brandy, every hour or two, but be careful not to allow any considerable quantity of stimulants to be given. When epidemic cholera was prevalent, many were affected by the symptoms just described. If the remedies indicated were promptly taken, he was confident many attacks of cholera would be warded off. It is true that fear often produced these very symptoms. But the spirit of camphor in warm brandy tended to soothe the fears, and dissipate the symptoms, and yet, it did not usually disorder the digestion. So soon as diarrhea supervened, the administration of some preparation of opium, together with aromatics, camphor, and a little chloroform, was urgently called for. Thus, two parts chlorodyne to one of spirit of camphor was a very good combination, thirty drops for a dose, to be repeated as required. Another very serviceable preparation consisted of equal parts of spirit of chloroform, spirit of camphor, laudanum, aromatic tincture of rhubarb, and tincture of ginger—teaspoonful doses were to be given every hour or two, according to the urgency of the case, or until four or five doses had been taken, alternated with an aromatic-sulphuric-acid mixture which might be given to advantage. A popular form was the following:

R Acid. sulphuric. aromat. f ʒj;

Tinct. opii deodorat., f ʒ vi, *vel* f ʒj.

M. S. 20 or 30 drops in water every hour or two.

He suggested the importance of administering these remedies hot, unless they created nausea. The hot water (two or three tablespoonfuls) in which these doses were given might be sweetened if desired. The patient should be required to lie down, and be kept perfectly quiet, covered with heated blankets, and dry heat should be applied to the surface of the body, especially to the extremities, by means of hot bottles, heated flat-irons, etc.

In India, the administration of calomel to any extent had lately been discouraged. One or two small doses might be given if thought best, but not more. So soon as frequent vomiting

began, or the stage of invasion became established, the combinations containing opium which have been mentioned might be discontinued, and either of the following mixtures given instead, in teaspoonful doses at intervals after a spell of vomiting, while at the same time some morphine or morphine combined with chloral should be administered by hypodermic injection, as the severity of the case might demand.

℞ Chloroform.,
Tinct. capsici,
Tinct. cannab. ind., āā, ℥xxx;
Acid. hydrocyanic. dil., ℥xx;
Æther., ℥viii;
Sp. mentha pip., ℥xv;
Syr. sassafras comp. ad f ℥j.

M. S. A small teaspoonful every half-hour or hour. Or

℞ Sp. ammon. aromat.,
Sp. chloroform., āā, f ℥j;
Tinct. capsici,
Tinct. cardamom. comp.,
Tinct. zingiberis, āā, f ℥ss.

M. Give in the same doses as of the other.

A mixture of aromatic powder, gum arabic, and acetate of lead, might also be given alternately with either of these if desired. In any case, mustard plasters should be applied over the stomach and abdomen, but not left on too great a length of time, and, if required, an enema of eight or ten grains of acetate of lead might be given after each evacuation. It was important to bear in mind that some preparation of opium or morphine, or the latter combined with chloral, was the chief remedy for cholera, and the surest agent we could use to arrest the further progress of the disease. When called, therefore, to a case already in the stage of invasion, we should administer morphine, or morphine combined with chloral, hypodermically without delay, in order to get these sovereign remedies into the system as soon as possible. For, if we could arrest the disease before the patient became collapsed, his chances of recovery would be very greatly increased. Caution must be exercised, however, when this form of treatment was pursued, for narcotism was easily induced by repeated hypodermic injections, whereas very large doses of opiates could be given by the mouth and rectum in this disease with comparative impunity. The solution usually employed for injection was, Morphine, gr. ijss. or gr. iv, with chloral hydrate, ℥ijss. or 3 ij to the ounce of water. Inject twenty or thirty minims. The hypodermic use of morphine and chloral was, of course, contra-indicated when the stage of collapse had become developed. During this stage it was most essential that the patient should be kept perfectly quiet and in the horizontal posture. No violent rubbings should be allowed, but it was beneficial to rub the limbs gently with hot oil. To allay the thirst, let the patient suck ice frequently. Carbonic-acid water or simple acidulated effervescing drinks might also be given by the tablespoonful. It was unsafe to allow the patient to drink any fluid whatsoever in large quantities. When the acts of vomiting and purging had become less frequent, and the algid state was well developed, very small quantities of stimulants were useful, but they should be given with great caution, lest vomiting should be provoked. Stimulant enemata might also be given, but, where the stomach had an inverted action, it was often better to inject small quantities hypodermically. Experience taught us, however, that anything like the free use of stimulants in cholera was uncalled for and exceedingly harmful. He had sometimes used small doses of atropine and strychnine by hypodermic injection, which proved apparently effectual in bringing about reaction. Amyl nitrite, by inhalation, might be given a trial, but it seemed to exercise very

little permanent or beneficial effect. Intravenous administrations of milk and salines might be resorted to, but the reaction they induced was not generally of a permanent character, so that many of those who had given this method a fair trial had abandoned it. Of late years, in Southern India, careful experiments had been carried out in reference to the value of impregnating the atmosphere of the sick-room with sulphurous acid by burning sulphur. The result had been that this procedure had been introduced as part of the treatment of cholera. He had on several occasions tried this plan, by subjecting the inmates of two different cholera sheds to exactly the same conditions and the same treatment in every respect, with the exception that in one the atmosphere of the shed was kept impregnated with sulphurous acid and in the other this precaution was omitted. He found that the proportion of recoveries was considerably greater in the sheds where sulphur was used. He, therefore, considered this an important adjuvant in the treatment. The atmosphere should not be so highly impregnated as to cause the patient or the attendants to cough violently. Sulphurous acid thus applied was not only a useful remedy, but it was also believed to decrease the liability of the disease being propagated or contracted by the attendants.

During the stage of reaction great care should be exercised. Vomiting often continued, and the normal absorbing power of the stomach and intestines was but slowly restored. Liquid nourishment by the spoonful should be most cautiously given; well-salted broths and milk, given as hot as possible, and not too frequently, were the only forms of food admissible until the enfeebled stomach showed signs of recovering its tone. Peptonized beef-tea and milk were frequently well borne if carefully prepared, so as not to nauseate the patient. If vomiting persisted the following emulsion might be given:

℞ Acid. carbolic., gr. viij;
Bismuth. subnitrat., ℥ij;
Mucil. acacia,
Aque menth. viridis, āā, f ℥j.

M. S. A teaspoonful every hour or two.

In this stage it was well to let Nature do the work of restoration, and give as little medicine as possible. We must bear in mind, however, that the kidneys must be assisted to resume their functions, and for this purpose mild diuretics, such as nitrate of potassium, should be carefully administered. If fever supervened, it was apt to be of a typhoid character. A combination of iodine and carbolic acid then had a beneficial effect. A popular formula was the following:

℞ Acid. carbolic., gr. ijss.;
Tinct. iodin., gtt. xv;
Aq. menth. pip. ad f ℥iv.

M. S. A tablespoonful every two or three hours.

To relieve restlessness and insomnia, bromide of potassium was often useful.

Dr. G. C. PAOLI said the author of the paper had omitted to mention a prominent English physician, Marshall Hall, who a few years ago, in London, read a paper which excited the interest of the profession in England, because he advanced new ideas regarding cholera, which he compared to the older orthodox theories. There was irritation of the vagus nerve in cholera, and on this theory in the East Indies the disease was treated with hydrate of chloral and nitrite of amyl, but it was not treated with these remedies in Europe. The speaker had seen four cholera epidemics, from 1834 to 1866, and since that time had seen it when it visited Chicago. Of all the remedies to check diarrhoea, the best he had known was sugar of lead combined with opium, in the proportion of gr. ij of the former to gr. ½ of the latter, given as might be thought best. In the col-

lapse stage it was useless to administer internal remedies, because the stomach would not absorb them. The blood was inspissated, and would not circulate freely, and hot blankets were superior to any other external application. If bacilli or bacteria were present in the disease, he believed they were innocent as causes. In fact, any "germs" or "atoms" he believed were imaginary as causes of cholera.

Dr. R. H. ENGERT asked the author of the paper what his percentage of recoveries had been.

Dr. JOHN BARTLETT gave his experience briefly in two hundred and fifty patients with cholera brought to a hospital in which he was attending physician. The percentage of mortality was extraordinarily large. With all the facilities, he expected he would be able to save one half the patients, but only one out of every six recovered. When the patients were brought to the hospital, however, they were in the blue stage, or stage of semi-collapse—partially cyanosed.

Dr. J. H. ETHERIDGE believed the nervous system would in the future be proved to have more to do with the ultimate pathology of cholera than bacilli, which he regarded as an illusion. By using remedies from the first to relax the spasm of the abdominal vessels, to prevent their pouring the watery portions of the blood into the intestinal canal, we should get at the gist of the trouble. When the venous system had become congested, neurotics and other suitable remedies should be administered (perhaps hypodermically) to aid the physiological action of these vessels. Opium, chloral, cannabis indica, and strychnine, he believed, would do this. Years ago the theory was to start the bile, then use astringents; subsequently, however, Dr. Chapman, of London, applied ice-bags to the spine for diarrhoea, to decrease the abdominal vaso-motor spasm, and to aid these vessels in the proper distribution of the blood.

Dr. R. E. STARKWEATHER asked the author of the paper if he thought it expedient for people to retire from the presence of the disease, and whether for a long or short distance. He remembered the epidemics of 1854, 1865-'66, and how the trains were heavily loaded with people leaving the city, for the prevailing idea was to get away from the disease. He was a believer in "cholera sheds"—or building sheds for pestilential diseases—for the care of the people, and instanced how yellow fever had been cared for at Pensacola in this way by the public authorities, which was the most successful method of saving a larger number of lives than any of the methods devised. He believed, from a public point of view, whether in the city or elsewhere, that the public authorities, more so than benevolent societies or organizations, should care for these cases. A large corps of nurses should be available. Health departments had these legal rights, and they should have, readily attainable, an association of nurses—for good nursing was the main thing to be relied upon.

Dr. D. O'SHEA said he had been taught years ago that collapse in cholera was similar to shock from surgical injuries, and that the treatment in both cases should be somewhat similar. Regarding the theory of fright and nervous shock, he cited an instance where he was about to perform a physiological experiment upon a tame rabbit. The animal became frightened, and he remarked to those present that he believed the animal would die from shock, or from being alarmed at the surroundings, and before he proceeded further the rabbit died. As he did not remember having read about the post-mortem appearance of the vessels of persons dying from shock, he concluded to dissect the rabbit, and found the vena cava containing the blood of the body. He cited this as *appropos* of the subject, and he thought it was interesting to show the similarity of the conditions, fright, shock, and collapse from cholera.

Dr. G. NEWKIRK asked if there was not some way by which

the community could be educated through the newspapers, so that the people could forestall these epidemics. He had read in a Jewish newspaper that the Jews in France had not been afflicted with cholera. He did not know that this was absolutely true, but, if it was, he could not understand why they should escape its ravages, or why they were proof against it, unless it was because of their habits or manner of dieting, from instructions they got from Jewish journals.

Dr. SCUDDER, in closing the debate, said, first, as to the percentage of deaths, this varied from 20 per cent. to 90 per cent. In severe epidemics 80 per cent. or 90 per cent. of the cases that were ordinarily seen proved fatal. When cases were seen early, the fatality was much less. To illustrate this better, he stated that in one of the cholera sheds in the relief camp thirty cases were treated by fumigating the premises with sulphur, and over 40 per cent. of the patients recovered, whereas in another shed, out of this number treated (omitting the fumigation), 80 per cent. died. In India, near Calcutta and Madras, where the disease was endemic, the natives would not drink well-water. They drank surface-water or water from tanks near their temples of religion, which they considered sacred, because of this and the reason that it descended from heaven. In contrast to the Indians were the Chinese and Japanese, who used garbage and human offal to fructify the fields and drank well-water. In India these materials were thrown on the surface, or were not covered up, and when the rain, which amounted sometimes to eight or ten inches at night, descended, they drank this surface-water, polluted though it was. He did not see that any benefit would be derived by people running away from a district in which cholera was epidemic. General panic and fright had much to do with predisposing to the disease and with its fatality. In India the poisoning of persons afflicted with cholera was frequent; arsenic was very greatly given, and was largely undetected. To warn the community by newspaper writing was too extensive a topic for him to more than merely mention. If the early, known methods of checking it were resorted to by the natives, cholera would not become epidemic. In India great prejudice existed against European medicines, but not against European surgery. Europeans traveling there were well up in the use of preventive measures. No native of England would travel without a bottle of camphor and a flask of brandy. He would also provide himself with chlorodyne, which was another remedy that was considerably used in India by European surgeons in treating the cholera.

LISTON H. MONTGOMERY, M. D., *Secretary.*

BUFFALO MEDICAL CLUB.

Meeting of August 20, 1884.

Dr. F. W. ABBOTT in the chair.

One Drop.—Dr. JOSEPH W. KEENE read a paper upon this subject. He said:

The present epoch in the history of medicine is pre-eminently characterized by a tendency toward greater precision in investigating and treating disease than has hitherto obtained. For many ages empiricism pure and simple reigned supreme. Diagnosis and treatment alike were based largely on the traditions of the art, and medicine as a science had no existence. Here and there, however, a master mind appeared, with a frequency ever increasing, who rebelled at thus taking for granted the teachings of the elders, and was inclined to inquire the reasons of things. The inevitable decadence of medicine into a mere trade or craft, engendered by adopting, with no effort to test its truth, the teaching of former times, was arrested only by the timely appearance of these men upon the stage. Tower-

ing above the dead level of the mediocrity around them, they stood as fixed points about which the dilute solution of medical thought began to crystallize; or, to better carry out the figure, like those mountain peaks which pierce the higher altitudes, and even in sunshine are crowned with a cloud condensed from the rare atmosphere, so around these commanding intellects the rarefied air of medical thought began to condense into palpable form, and the science of medicine to be evolved.

The process has been slow and marked by retrogressions, but the movement has been steadily onward. A few great advances here and there among the many lesser ones plainly show the onward march of medicine. Dissection of the human body, investigation of post-mortem appearances, vivisection, and the study of the physiological effect of drugs, are prominent among these great advances. Each marks an epoch when medicine, obeying the impetus gained by a multitude of shorter steps, has taken a gigantic stride. And, when retrogressions have occurred, they have been rather the stepping backward of the athlete to gain momentum for his leap.

This tendency toward exactness has evolved the clinical thermometer, the stethoscope, the use of the microscope in diagnosis, and the twofold application of chemistry in investigating disease and in improving our *materia medica*.

Such vague expressions as high or low or moderate fever can but imperfectly voice the conception of the physician. His idea of the conditions may be as accurate as though expressed in degrees Fahrenheit, but he can not satisfactorily convey this impression to another unless he has in his vocabulary terms less uncertain.

The stethoscope differentiates conditions formerly considered identical. The microscope finds in Bright's disease a battalion of maladies, while chemistry lifts the profession toward exactness by segregating active principles from bulky drugs and presenting new products and new combinations.

Even that professional plaything the sphygmograph, a costly and complicated toy, whose tracings record chiefly its own peculiar gyrations and perturbations without rhyme or reason, rhythm or regard to the cardiac impulse except with a large correction necessitated by a multitude of circumstances—and whose value in the diagnosis of cardiac disease is probably coequal with that of the obsolete *planchette* in the diagnosis of mental disorder—even this we can not treat otherwise than tenderly, as evincing a misguided but unmistakable tendency toward precision.

This same tendency is manifest in the improvement in special instruments—the refined armamentarium of the specialist. In extracting teeth, for example, the physician (for some physicians still know how to pull teeth and let blood) is not confined to the tooth-key of former times, but has at command instruments adapted to the contour, shape, and situation of the tooth. In surgery and gynecology, in ophthalmology and laryngoscopy, and all the well-defined specialties, are the results of this tendency markedly exhibited in new instruments devised or old ones improved, thus rendering possible procedures hitherto untried or attempted without success.

In our medical nomenclature and in the recording of cases the same tendency is observable. The attempt is made to name diseases according to their pathology, to the discarding of old names, which are often unmeaning misnomers.

Charts for daily recording and tracing the movement of the bodily temperature, the respiration, and circulation, in so general use, evince the same disposition.

In this general movement toward accuracy it is not surprising that posology should have a share. The researches of the chemist have done much to abolish the huge and nauseous doses of our fathers. Here, again, differentiation is at work. The

active portion of the drug is separated from the inactive or deleterious parts, and thus greater purity of effect is gained by administering a smaller quantity.

In weights and measures employed by druggists the spirit of reform is abroad. The metric system, so invaluable in its decimal simplicity and its adaptability to universal use, is rapidly displacing its cumbersome and ambiguous predecessor—cumbersome in its divisions and multiples, ambiguous in that the same denomination represents different quantities, not only in different nations, but even in the same land. What is a pound? What is an ounce, a grain, a pint? The answer must suggest the absurdity of the system, if anything so chaotic can be called a system. But reform is in progress. The Dispensatory and the Pharmacopœia are gradually sloughing off much that is undesirable, and receiving increments of value. Something of uniformity in preparations, naturally of the same class, now obtains. The scruple has disappeared; the drachm, with its misleading symbol, is treading upon its heels and jostling its departing third. The drop has been abandoned for the minim in stating the dose, so far as the Dispensatory is concerned; and it is lamentable that many of our text-books on *materia medica* and therapeutics still retain the barbarous anachronism. The drop is out of place in our times. Reverence for our ancestors leads us to give the venerable "Signa: One teaspoonful in a wine-glass of water after each meal," just as though a teaspoon or a wine-glass held a definite quantity. Still, as a direction to the patient, these terms, with all their Delphic vagueness, are not so far misleading. Yet a more rational method of exhibiting drugs is already struggling into existence—a method which not only aims at definiteness in the amount to be given, but indicates a reference to the nature and severity of the disease and the stomachic conditions favorable to its ingestion and assimilation, as regards frequency and time of giving it. As active principles become better known and their action better determined, accuracy can be more nearly approximated, and the coarse and crude methods of administration give place to a more intelligent adjustment of the prescription and regulation of the dose.

Simplicity in prescribing is in itself a step toward accuracy. The omnibus prescription, among whose multitudinous ingredients one may chance to influence the given disease, is still far from uncommon. Some of our brethren seem to entertain the idea that the length of the prescription is an index of the depth of their wisdom. So many circumstances may modify the medicinal value of a drug, especially in our vegetable *materia medica*, that it seems desirable to eliminate all modifying circumstances within our power. Many of them, in the present condition of our knowledge, are beyond our control; others are easily reached. If we premise that the true medicinal value of a drug is indexed by the amount of alkaloid or active principle in a given quantity, we shall probably be near the truth. The books speak of various circumstances which render the strength of drugs very variable. The climate, season, time, and mode of gathering and preserving the crude drug—play each an important part in determining the strength of the preparation. When to these factors of uncertainty is added a possible disposition on the part of the manufacturer or dispenser to adulterate his goods, together with an inherent vagueness as to the size of the dose our prescription calls for, and little reliance upon its intelligent administration to the patient, it is no wonder that disappointment often attends medication.

To illustrate: a prescription calls for the compound tincture of cinchona to be given in teaspoonful doses. Some barks have but one twentieth as much medicinal value, as estimated by the quantity of the alkaloids, as others. Bark spent in preparing quinine is also sometimes used to make the compound tincture and the various elixirs. Suppose, now, our manufacturer

sells a cheap or spent bark to the druggist; we will, by courtesy, suppose our druggist to be honest in using the proper weight of this inferior bark in making the tincture; suppose, now, the patient employs, in taking his medicine, a spoon such as we have all seen used for the purpose. It is of silver—a family heir-loom—small originally, and now twisted and battered by the repeated dentition of successive generations, with an occasional indentation from heel or rocker, until its original capacity of perhaps thirty minims is reduced to half that quantity. Suppose, again, that our patient forgets to take his medicine once in three times—a small percentage of forgetfulness, as your experience will testify—how much alkaloid does he ingest per diem? What fractional part of the intended dose really enters his stomach?

Again, a prescription calls for three drops of tincture of aconite root or of nux vomica in a drachm of vehicle. The plant was grown in an uncongenial climate, in unfavorable soil, and in an unpropitious season; it was allowed to mature its seed before gathering; was injured by heat and moisture in drying; the tincture prepared with a due regard to economy; dispensed from a fine dropper giving two or three hundred drops to the drachm; then administered in the spoon above described and omitted in the usual ratio—how much aconitine or strychnine will be ingested?

But it may be argued that no dose can be assigned beforehand as the proper one in any given case; that each case is to be considered by itself and the administration of remedies regulated by the effect produced. This is granted; the very uncertainty as to how much medicine of known strength a given case requires renders precision the more essential where precision is possible. This matter of idiosyncrasy is another element of uncertainty, and a factor which must affect the result. The size of the dose we can easily regulate if we will—at least so far as our prescription is concerned.

But let us premise that all our medicinal preparations are fairly representative of a given amount of alkaloid or active principle; that, on the whole, every preparation is honestly prepared, and varies but little in potency. The advantages of this uniformity of strength may be set at naught by prescribing in a measure so uncertain as the drop. It is well known that drops differ in size, not only in different fluids but in the same fluid under different circumstances. The ordinary practice of dispensing drops from the bottle in which the fluid is kept seems to be the most reliable, in view of the experiments of the writer.

Yet it is impossible to secure uniformity of result, the same bottle giving drops of various sizes according to the amount of fluid it contains, and the rapidity with which they are allowed to flow. With the bottle half full, and each drop allowed to round itself fully, an approximate uniformity is secured. Increase or diminish the inclination, or allow the drops to fall in rapid succession, and their size is modified.

The dropper so generally used by druggists is a snare. In tubes of the same caliber and the same size of orifice, if these two conditions could be secured, the length of the nozzle and of the tube itself, the degree of pressure exerted upon the rubber cap, influence the size of the drop. Capillarity, cohesion, and adhesion, on the one hand, and the ever-varying pressure, the *vis a tergo*, on the other, are factors impossible to adjust with uniformity.

The pipette of the chemist is less objectionable, but here too the same resistances occur, although the pressure, being that of the atmosphere, is constant.

The glass rod gives even greater discrepancies. The drop will vary according to the size of the rod and the length of the flow, the form of the end, and the rapidity of the stream.

The habit of dropping from a cork is, perhaps, the most

reprehensible of all. The size here depends upon whether the cork is wet or dry, upon the length and rapidity of the flow, the inclination at which it is held, and probably upon the quantity of fluid in the bottle.

It is probable that many other influences besides those mentioned act to modify the size of drops. But enough have been cited to show, if proof were needed, the unreliability of the drop as a measure. Indeed, it was assumed at the outset that the main facts were well known to all. It is to lead to a recognition of these facts in prescribing that this paper has been prepared, and the attending experiments have been made, some of the results of which are here presented.

Table showing the variation of several liquids in number of drops in a drachm when measured as ordinarily by physicians and druggists.

	No. of minims in comparison	Dispensing bottle.	Larger common dropper.	Small dropper, moderately flat.	The curved dropper.	Fine short pipette.	Still glass rod, fine stream, dull point.	Coarse glass rod, blunt point.	Wet cork.	Ordinary open tube, without point.
Niagara water....	60	40	130	96	132	204	80	42	28	58
Alcohol, 95°.....	60	100	170	212	326	196	388	138	58	182
Fowler's solution.	60	80	98	118	176	108	232	115	54	58
Tincture of nux vomica.....	60	128	192	260	366	224	294	130	52	64
Tincture of aconite root.....	60	113	184	256	332	214	332	136	56	114
Fluid extract of aconite root....	60	96	184	272	336	292	308	128	66	108

In view of these facts, is it not imperative that we abandon the drop? We will not urge too strongly the adoption of the metric system, so much more exact and so simple, but will, for the present, be content with asking that the profession use the minim instead of the drop.

The paper having been followed by some discussion, Dr. KEENE, in closing, said that he had no doubt the figures in his table would vary greatly with each re-measurement, but that only served to make a fixed standard all the more necessary.

Reports on the Progress of Medicine.

GYNECOLOGY.

By ANDREW F. CURRIER, M.D.

The Homology of the Hymen.—Pozzi's paper ("Arch. de toolol," Apr., 1884) was suggested by two singular cases which appeared in his service at the Lourcine Hospital, in one of which, that of a girl nineteen years of age, there was absence of the vagina, uterus, and ovaries; in the other, a pseudo-hermaphrodite male, there was perineal hypospadias. The studies of the author led him to the following conclusions, which differ materially from those of previous anatomists and investigators. 1. The hymen is an appendage of the vulva and not of the vagina. It is developed from the uro-genital sinus, which also forms the short vestibular canal which constitutes the margin of the vaginal canal. In both of the cases in question there existed a hymen and a vestibular canal, but in neither was there a vagina or a uterus. 2. It is, therefore, by a false homology that the term *bulb of the vagina* has been given to that portion of the vagina which was supposed to correspond to the bulb of the urethra in the male. The spongy bodies of the urethra are not comparable to the *labia minora*. In the author's hypospadias case there were both well-marked nymphæ and spongy bodies, though atrophied, under the form of the bridle or vestibule. The spongy bodies are the result of a special formation along the border of the uro-genital sinus. In the female, and

in a subject of hypospadias, we have, externally, the development of the labia majora; internally, that of the nymphæ. 3. In the female, between the clitoris and the meatus, we find a small bridle, which the author proposes to call the muscular bridle of the vestibule, which is marked with a median groove, and is divided below so as to surround the meatus urinarius. When the hymen is present it appears to be a continuation of this membrane. 4. The study of the balano-urethral bridle, as in cases of hypospadias, shows its connection with the atrophied bridle of the female vestibule. The hymen in the female is the analogue of the whole or a portion of the urethra in the male; it is the bulb in an embryonal condition, non-erectile and membranous, at the entrance of the vestibular canal, a vestige of the uro-genital canal. 5. The analogy of the glands of Bartholin in the female with those of Mery or Cowper in the male is readily traceable. The greater relative length of the ducts in the male glands is noticeable and its object can be readily understood. 5. The muscular bridle of the vestibule in the female is the remnant of the anterior or cylindrical portion of the spongy bodies just as the hymen is the remnant of their posterior or ovoidal portion.

Curetting the Uterus.—Düvelius ("Ztschr. f. Geb. u. Gyn.," x, 1) remarks upon the frequency of the operation of curetting the uterine mucous membrane within the past few years, though its propriety is still questioned by many. Whether it is performed for diagnostic or for therapeutic purposes, its opponents challenge: 1. The possibility of making a diagnosis of the disease of the mucous membrane from the material which is scraped away; 2. The possibility of curing a diseased mucous membrane by the use of the curette; 3. The possibility of a subsequent normal pregnancy. In the author's investigation of this subject he appears to have been able to obtain abundance of material, both from the living and from the dead, and this fact is worthy of notice. The uteri which were operated upon belonged to women between the ages of twenty and forty, excepting in three instances, in which they had passed their fiftieth year. The post-mortem specimens were removed within twenty-four hours after death, and had neither suffered post-mortem changes nor been affected with disease, so far as could be ascertained. The operation was performed upon these specimens in the same way in which it is customarily performed upon the living subject; the specimens were hardened in absolute alcohol, and sections were then made in all directions with a microtome. Microscopical examination showed that in some cases the mucous membrane had been entirely removed, quite to the muscular structure of the uterus, while in others more or less had been left behind. In most of the sections, either deep in the muscular structure or else superficially, the remnants of larger or smaller glandular tubes were seen, which had been torn obliquely. Nowhere was mucous membrane found with its superficial epithelium intact; and, since disease of the uterine mucous membrane could hardly exist without involvement of its superficial epithelium, the first objection of the opponents of the operation is answered by reason of the abundance of the products which may be removed with the curette. In five cases of disease of the uterus the author was able to correctly diagnose the disease by means of small portions of mucous membrane which were removed with the curette. In two of the cases the microscopic examination of the products of the curetting indicated carcinoma of the body, in two malignant adenoma, and in one sarcoma of the mucous membrane. The uterus was removed in all the cases (from the living subjects), and the diagnosis confirmed. In regard to the second objection, two questions become pertinent—(1) whether after curetting of the uterine mucous membrane a renewal of that membrane is possible; (2) whether the new growth, if any, holds

the same relations to the muscular tissue of the uterus as in the normal state, and whether or not scar-tissue is formed. Bearing upon this subject, two patients came under the author's notice who were subjected to repeated curettings with subsequent caustic applications to the denuded surface. The object of the operations was to overcome a tendency to profuse hæmorrhages, and, after they had proved ineffectual, the uteri were amputated. Microscopical examination of the specimens showed the presence of the same histological elements which exist in the normal uterine mucous membrane, but they were abnormally arranged. A cicatrix was not found either in the mucous membrane or on the border between it and the muscular tissue. This result was also confirmatory of the investigations and results of Leopold in the same field. The third objection is groundless not only from observed facts, but also because it has already been shown that no cicatrization of the mucous membrane takes place, and that that membrane is not brought into an abnormal condition by the operation in question. The effect of curetting and the subsequent application of stimulating substances to the surface operated upon is to remove the accumulated secretions, and to remove the superficial or even the deeper layers of epithelium, and no evidence has been brought forward to show that its influence is destructive of function; on the contrary, the author's experience has been that its effect is highly beneficial. Sixty cases of pregnancy were observed in the years 1879 to 1883, in which the women had undergone curetting previous to conception. In some of the cases it was even ascertained that a tendency to abort had been cured by the operation, and the women were enabled to carry their fetuses to term.

Uterine Displacements and their Treatment by Means of Medicated Tampons.—Dr. R. Bell's paper ("Edinb. Med. Jour.," March, 1884) was read before the Edinburgh Obstetrical Society, and offers objections to the too frequent use of the pessary. The views of the author, like those of other gynecologists, have undergone a change upon this subject. The medication to which the tampons (cotton-wool) are subjected is with a mixture of glycerin and alum, and it is maintained that they act (1) as a support to the uterus; (2) as a depleting agent; (3) as an invigorating agent to the uterus and vagina. The condition for which this treatment is especially applicable is retroflexion, and the symptoms which follow such a condition, especially from altered mechanical relations, are too well known to require specification. Prolapsus is also a condition which is amenable to this treatment. Improvement is the rule, by the adoption of this method, and sometimes cure may be effected. In other cases the subsequent use of a pessary completes a cure which has been already begun.

The Relations between Ovarian Cysts and the Broad Ligament.—The subject of the formation of adhesions is one with which every ovariologist is familiar, and, when not too firm nor too intimately associated with contiguous organs, they form no serious obstacle to the performance of ovariectomy. M. Terrillon ("Rev. de chir.," Feb., 1884) considers that those cases in which intimate association is formed by an ovarian cyst with the broad ligament form a class by themselves. In such cases it is not inflammation which causes the unusual or dangerous relations, but the mode of development of the tumor itself, becoming in part infiltrated, as it were, into the broad ligament. Usually it is a single lobe which juts out beyond the pedicle of the parent tumor, and insinuates itself between the two layers of the broad ligament, which do not offer great resistance. In the course of its further development it readily forms organic union with the sides of the uterus, the bladder, the upper part of the vaginal *cul-de-sac*, also with the walls of the pelvis, the iliac vessels and nerves, and even with the ureter. It will there-

fore be useful to remember that a dissection of the layers of the broad ligament will lead one directly to the cyst, and its removal will thus, to a certain degree, be facilitated. Parovarian cysts, which also develop between the layers of the broad ligament, are apt to form strong adhesions with contiguous organs, and their removal is often difficult or impossible. The same conditions may also accompany the development of uterine fibromyomata. The closeness of union which is sometimes found between the cyst, the broad ligament, and the uterus explains the great vascularity of the former, since it is enriched by the vessels of the two latter organs in addition to its proper supply from the ovarian vessels. The author thinks it is well to remember, in examining a case of this kind, that the portion of the original tumor which invades the broad ligament is usually its lower portion. He thinks there is no certain sign by which the condition in question can be made out, particularly in its early stages. A number of indications are mentioned, which are common, however, to other varieties of abdominal tumors. The prognosis in cases in which this complication is present is necessarily graver than in ordinary cases, for reasons which are obvious enough. Complete removal may be impossible on account of the intimate relations with adjoining structures, and the increased liability to septicæmia after an operation, whether complete or incomplete, is to be noted. The operative details will vary according as the tumor has or has not become united with the bladder, rectum, etc. For a full recital of these details we would refer to the author's article.

The Relations of Ovarian Cysts with the Urinary Organs.—The same author ("Ann. des mal. des organes génito-urinaires," Jan., 1884) observes that the fact is very noteworthy that those who are the subjects of ovarian cysts are very apt to be affected with an irritable condition of the bladder. It is equally noteworthy, however, that this rarely develops into a serious complication. When adhesions have formed between the cyst and the bladder or ureters, and the case is presented for operative interference, the question may be a serious one, and will call for the most careful treatment on the part of the surgeon. The functional troubles of the urinary organs from the development of an ovarian cyst may consist either in an exaggeration in the frequency of micturition, or, less frequently, a diminution of desire to perform this act. In the latter case systematic catheterization sometimes becomes a necessity. With the bladder trouble there is very often an accompanying condition of constipation, which becomes more decided with the increasing pressure of the developing tumor upon the rectum. If the tumor encroaches upon the tract of the ureter, serious disturbance in the kidney may result, and Boinet records cases of gastric, pulmonary, and nervous disorders which were traceable to kidney lesions. The ureter is most frequently compressed when the tumor develops between the folds of the broad ligament. In cases in which adhesive attachments to the bladder are formed, ulceration into that viscus sometimes occurs, with evacuation of the contents of the cyst. Such an accident is liable to be attended with considerable pain and shock, but is not, of necessity, fatal. Several interesting cases of this character are recorded. When performing ovariectomy one should always have in mind the possible danger of wounding the bladder, either when it is enlarged and hypertrophied and lies between the tumor and the abdominal wall, or when it retains its normal dimensions, but is attached to the cyst by adhesions upon its posterior wall. Accidents of this nature are usually fatal, and several classical cases are referred to. The author thinks it is a safe plan, in all cases, to evacuate the bladder before performing laparotomy. [Though this is the common belief and practice, it is strongly opposed by no less an authority than Keith, who believes that a full bladder is a useful guide.

See "Brit. Med. Jour.," Dec. 8, 1883, "On Supra-vaginal Hysterectomy," etc.] The diagnosis of vesical adhesions can not be clearly made out in regard to their nature or extent, but the careful and skillful use of the sound will reveal the boundaries and displacements of the bladder, and so put one on guard at the time of the operation. In case the viscus should be wounded, the choice of treatment lies between simple closure of the wound and closure of the wound with suture to the abdominal wall, with the possibility of a fistula resulting. The author finds twenty-five recorded cases of this accident, of which fourteen were fatal. Should the ureters be wounded, the accident, though rare, is an exceedingly grave and embarrassing one, and the possibilities of treatment consist in the formation of an external fistula, or a series of plastic operations such as occurred in the experience of Nussbaum. In Simon's case an injury to the ureter was followed by extirpation of the corresponding kidney. The patient recovered.

Laparo-myomectomy.—Kaltenbach ("Ztschr. f. Geb. u. Gyn.," x, 1) observes that no question in all gynecology is discussed with so much animation as this one. From some cause or other, however, the published reports of cases are too few in number for the establishment of principles concerning the operation. The principles which are applicable in ovariectomy are valuable to a certain extent, but they are not sufficiently comprehensive for the operation which is under discussion. In other words, we must be well grounded not only as to the proper methods, technique, and indications for this operation, but also as to the anatomical relations of the extirpated tumor, and the phenomena which attend the condition subsequent to operation, even after the patient has recovered from the immediate effects of the removal of the growth. Ten cases comprise the author's experience, extending over a series of years. In two of these cases myomectomy was performed, and, in the remaining eight, supra-vaginal amputation of the uterus, the two operations being essentially different both as to difficulty of performance and as to significance. In myomectomy the tumor has little or no pedicle, the uterus is unharmed, or, at least, its cavity is not opened. The treatment of the stump is almost invariably intra-peritoneal, the particular method being governed by the thickness and vascularity of the pedicle. If the pedicle is very thin, excision of the tumor, with subsequent covering of the cut surface with peritonæum, and suturing the divided edges of the latter, is Schröder's plan, and is approved of by the author. In cases in which the pedicle is more than 0.5 cm. in thickness, the best plan is to transfix and ligate, as in ovariectomy, and also to throw another ligature around the mass for additional security. Silk is recommended for ligating small pedicles, and the elastic ligature for large ones. In the supra-vaginal amputation of the uterus, the uterine cavity is, of course, opened, and the pedicle consists of the remnant of the body, if any, and the neck, together with the dependent ligaments. Trunk vessels are in this case divided, and means for the ingress of infectious material are afforded by the canal of the cervix, with its lining of mucous membrane. The author's preference for extra-peritoneal treatment of the stump in this operation is seen in the fact that in all his eight cases this method was used. The stump was held in position by long lance-shaped needles, which rested upon the abdomen; its wounded surface was thoroughly cauterized, and antiseptic applications were constantly used. In some cases the elastic ligature was carried around the pedicle, and in others the latter was transfixed with it. Only one of these eight cases was fatal. Regarding the removal of the ovaries, the author thinks this should form a part of the operation in every case in which the climacteric has not been reached. The indication for operation in two of the author's cases was the great size of the tumor; in four, its rapid

growth, hæmorrhages, peritoneal irritation, and uncomfortable pressure upon abdominal organs; in one, total prolapse of the uterus; and in one, the great discomfort in the pelvic region caused by a tumor in Douglas's *cul-de-sac*. The author is in favor of early operations, to anticipate the discomforts or even serious conditions which may attend the growth of the tumor. The latter is to be removed entire, if possible, thus saving time and diminishing the hæmorrhage. The history of Kaltenbach's patients after their recovery is satisfactory in most respects. The general health of all remained good; in three there was ventral hernia; in one a cervical fistula opened into the peritonæum. These were the most serious accidents which occurred. The prognosis in such operations is now nearly as good as in the removal of any abdominal tumors. The chief dangers lie in the possibilities of hæmorrhage from the extensive development of the vessels at the base of the tumor, in the possible formation of emboli or thrombi, on account of dilatation of the parametral veins, and in anæmia caused by the sudden removal of a firm body from the abdominal cavity. On the other hand, it may be said that the tumors are usually benign in character, that they can generally be removed entire, that there are few adhesions, and that the peritoneal cavity can usually be entirely cleansed. As to the merits of the intra- and extra-peritoneal methods of treating the pedicle, the author's results were obtained with the latter, and he is naturally inclined favorably to a plan which has served him so well. The main improvements which recommend to operators the use of the intra-peritoneal method consist in the isolated treatment of the four trunk vessels, and in the firm suturing of the pedicle. Danger from hæmorrhage and from sepsis is thus, to a great degree, eliminated. The details of the operation do not differ from those which have been recommended by Schröder. With further improvements in the intra-peritoneal method, the author thinks it will ere long supersede the older method. With present experience, both methods have their adherents, and complete justification.

A New Method of Partial Extirpation of the Cancerous Uterus.

The method which Dr. E. Van de Warker ("Am. Jour. of Obstet.," March, 1884) describes is the use of the "potent chemical cautery," in distinction from total extirpation of the uterus through the vagina, and vaginal amputation with supravaginal excision. He asserts its safety and ease of performance as compared with the first of these, while the second is disposed of by the consideration that it is "simply a survival of the antique." [Faint praise for Schröder's operation. For Schröder's statistics, see "Brit. Med. Jour.," Sept. 15, 1883 ("The Vaginal Extirpation of Carcinoma of the Uterus").] The author's plan is as follows: The cervix is amputated at the vaginal junction, and then cut away as high as the os internum with the knife, scissors, or curette, according to the condition of the tissues. The cavity is then packed, not too firmly, with pledgets of absorbent cotton soaked, and then wrung dry, in a solution of sub-sulphate of iron one part, to three of water. Little or no cotton is required in the vagina. The packing must be removed on the second day, and then a solution of chloride of zinc is applied of the strength of five drachms to the ounce of water, or, in some cases, of equal parts by weight. These solutions are also used upon cotton. As a useful precaution, the author recommends a preliminary smearing of all the contiguous mucous membrane with vaseline in which bicarbonate of sodium has been incorporated. The weaker zinc solution is to be used in those cases in which there is only a small depth of uterine tissue remaining; but, if sufficient remains to allow of a deep slough, the stronger solution is preferable. The cotton can be removed in from two to five days, and the slough will follow in five or ten days more. Proper precautions against hæmorrhage

must follow the fall of the slough. Cicatrization is usually accomplished in from two to four weeks. Two interesting cases are narrated, and they are accompanied by cuts which demonstrate the conditions of disease and repair.

New Inventions, etc.

A NEW ABDOMINAL DRAINAGE-TUBE.

By H. MARION-SIMS, M.D.

The accompanying cut gives a very good idea of an abdominal drainage-tube which I had made last winter. It acted so nicely and drained the pelvis so well that I wish to call the attention of the medical profession to it. It consists of a large and a small tube made of hard rubber. The smaller tube is inside of the larger one, running along the posterior wall, and terminating about an eighth of an inch from the bottom. The large tube is perforated on the sides and curved on the top, so that, when in the abdominal wound, the top of the tube projects nearly over the symphysis pubis. The smaller tube is for the purpose of washing out the peritoneal cavity, the water being thrown in at the bottom of the cavity instead of at the top, as in most drainage-tubes. I attach a small rubber tube at B, and force the water to the bottom of the tube C with a Davidson's syringe. At the mouth of the tube A, I attach a larger rubber tube, and, while washing out, the water runs into a bed-pan or any convenient vessel placed in the bed. Where drainage is constant and very profuse, the rubber tube can be long enough to hang over the side of the bed into some vessel placed there. By having the smaller, or washing-tube, project through the dressing on the wound, the pelvic cavity can be washed out without removing the dressing, which will remain dry and clean. This tube is made by Mr. Ford, of Caswell, Hazard & Co., and can be had in three or four sizes.



Miscellany.

THERAPEUTICAL NOTES.

The Nutritive Value of Maltose.—M. Dastre and M. Bourquelot, in a note recently communicated to the *Académie des sciences* ("Progr. méd."), give it as the result of their experiments that maltose undergoes direct consumption when injected into the blood of an animal, without having been transformed by any digestive juice. They estimate its practical value as between that of lactose and that of glucose.

Valerian in the Treatment of Superficial Wounds.—At a recent meeting of the *Société de biologie* (*ibid.*), M. Arragon brought forward a new method of dressing wounds, by which, he declared, their healing was hastened and the pain was made to disappear at once. The method consisted in the application of compresses wet with a decoction of thirty

parts of valerian root in one thousand parts of water. Of fifty patients treated in this way, with only two had benefit failed to result, whether the wounds were lacerated or contused, but it is expressly stated that the treatment is of no avail for deep wounds. In one instance, warm injections of the decoction were used for otitis media. The anodyne effect is attributed to the action of the valerianic acid on the terminal nerves, and an antiseptic influence also is credited to the remedy.

Antipyrine, the new antipyretic alkaloid, has lately been subjected to thorough investigation by Dr. della Cella, at Professor Marigliano's clinic ("Italia Medica"; "Bull. gén. de thérap."), and the following facts have been noted:

Antipyrine presents itself in the form of prismatic crystals, very soluble in water and in alcohol, but less soluble in ether. Its solutions are of neutral reaction. With sulphuric acid it forms a salt soluble in water and in alcohol, but insoluble in ether. Crystallized antipyrine detonates violently when heated with concentrated nitric acid; heated gently with caustic potash, it assumes a reddish color. With oxidizing agents, in the presence of water and heat, it is decomposed into various products, among which derivatives of phenol and of acetone seem to predominate. Its aqueous solution and that of its salts present the following reactions: With chromic acid an orange-yellow precipitate is formed, which becomes liquid with heat. With hypobromite of sodium it forms a white precipitate; on being heated, this becomes yellowish, and little brown drops are seen to separate, having an empyreumatic odor. With Millon's reagent there is a yellow precipitate. With perchloride of iron an intense red color is developed; the liquid is decolorized by impure hydrochloric acid. With iodized iodide of potassium there is an obscure red precipitate. With iodide of potassium and mercury a white precipitate is thrown down. With iodide of potassium and bismuth there is a yellow precipitate verging on orange. With tannic acid the precipitate is white. With picric acid it is yellow. Chlorine water causes no change of color, but, if a current of chlorine is made to pass into an aqueous solution of antipyrine, a solid white substance is seen to separate. Of all these reagents, the most sensitive is iodized iodide of potassium, which gives a reaction with a 1-5,000 solution of antipyrine.

To detect antipyrine in the urine, the latter must first be acidulated with sulphuric acid, in the proportion of about 5 drops to 6 c. cm. of urine, the proportion of the acid being larger if the urine is alkaline. If the mixture becomes turbid, it is to be filtered, and ten drops of the iodic reagent should be added. The presence of antipyrine will be manifested by a red-brown precipitate. This reaction, however, will be more or less marked, according to the time at which the urine has been passed: three hours after the administration of the drug, the reaction is present, but slight; in four hours it is very marked; in twenty-four hours it is still very decided; and in thirty-six hours it is yet perceptible. Sometimes it disappears after four hours, but to return subsequently.

Experiments were made by Dr. Queirolo, an assistant at the clinic, on the general action of the drug and its influence on the arterial pressure and the caliber of the vessels. Antipyrine was given to persons free from fever and to others having fever, to the amount of from 4 to 6 grammes in the course of from an hour to three hours, with the following results:

1. It gives rise to no appreciable general phenomena, although sometimes, in excitable individuals, particularly women, some vomiting is produced.
2. The frequency of the respiratory movements is not affected.
3. The frequency of the pulse is always diminished.
4. The arterial pressure, measured with Baasch's apparatus, is either unaffected or a little increased.
5. The normal temperature is not disturbed.
6. In persons free from fever a very slight dilatation of the cutaneous vessels is produced; in those with fever this dilatation is more marked; it precedes the lowering of the temperature. These researches were made by means of Mosso's plethysmograph.

Its action upon fever, as observed by Dr. Ampugnani, also an assistant at the clinic, is as follows:

1. When 50 centigrammes are given at once, there is generally a lowering of 2 or 3 tenths of a degree [$^{\circ}$ centigrade] in the course of two hours, but this does not last.

2. When a gramme is given at a dose, in the majority of cases the depression begins in an hour, and increases for five or six hours, reaching as much as 3° .

3. If a gramme and a half is given at once, the depression is yet more marked, and after seven hours it still amounts to 2° or 3° .

4. A dose of 2 grammes causes a lowering of from 0.8° to 1.3° at the end of an hour, which increases during the following hours and lasts still longer than before, so that, so to speak, it may blot out a paroxysm of fever.

5. If repeated doses are given, the action is manifested in from six to eighteen hours, and may continue for thirty-six or forty-eight hours or more.

Consequently, phthisical patients who take antipyrine find their fever suppressed not only for that day, but also for the next day, and even the day after, so that, from having been quotidian, the fever becomes a tertian or even a quartan.

Professor Maragliano reserves the results of other experiments for future publication.

The Etiology of Fever.—Dr. S. Davis, of College City, Cal., sends us a communication which we condense as follows: The genesis of fever, says Dr. Read, in the "Journal" of July 19th, remains an interesting though somewhat speculative question. The maintenance of animal heat is to the doctor's mind alike most singular and mysterious. There must, says he, be some inhibitory power in the system for the preservation of this normal standard of warmth. To which I suggest that it would be still more singular if a being so wonderfully made and still more wonderfully endowed was not supplied by the Creator with inhibitory power for both the physical and moral constitutions. For the generation and maintenance of the germinating, invigorating vital heat, we have the wonderful co-operation of the heart and lungs, with the constancy of which under normal surroundings there is no variability or shadow of turning. If the origin of vital heat is still a speculative one, it is a humiliating confession—the profession ever learning but never coming to the knowledge of the truth.

It does seem to me that anatomy and physiology have placed this question of vital heat quite within the compass of professional understanding, on a par with the understanding of at least many other phenomena in nature, sufficiently so at least for all practical purposes of hygiene or therapeutics. The importance of this latter understanding comes in from the well-grounded conjecture, if not even demonstration, that the morbid excitement of the circulation as connected with respiration is the cause of fever. The question, says Dr. Wood or Dr. Read, is whether the rise of temperature, or fever, is the consequence of increased or of retained heat. I answer that it is most evidently from both. In every instance of fever the heat-producing power of the system is morbidly augmented and the heat-radiating power is suspended. The secretions, even the transpiration from the skin, are locked up, and the mouth is dry. Just as Dr. Flint correctly declares ("Practice," third edition), the abnormal action of the heart increases the temperature, giving rise to menal excitement and undue excitability of organs, with augmentation of sensibility and muscular irritability.

A case of fever is analogous to a state of furious anger. Nothing can be done to restore quiet until this insane passion subsides, even at the expense of restraint if necessary. There is the most obvious indication for restraint; for sedation of this cardiac excitement which is the cause of fever.

Diphtheritic Nephritis.—Professor Joseph Fischl read before the German Medical Society of Prague a communication on diphtheritic nephritis. He observed that the epithelium is always swollen and fatty. The lesions are always accompanied by lesions of the stroma. Dr. Fischl has found in nine cases out of ten of interstitial nephritis, especially when subcapsular, that the Malpighian bodies are attacked. He also found vascular lesions, periarteritis, and desquamation of the epitheloid lining. He never observed micro-organisms, although his investigations were conducted with the greatest care, and the most perfect optical instruments were used. A number of microscopic preparations and drawings were shown in support of his assertions.—*British Medical Journal*.

The Question of the Exemption of a Physician's Property from Seizure for Debt.—A New Hampshire physician was unfortunate enough to fall into debt and have judgments entered against him. The creditors naturally tried to obtain payment by issuing execution, and among the articles levied on by the sheriff were the physician's wagon and harness. The New Hampshire law says that such articles as are "tools of a person's occupation" can not be seized and sold under an execution. The physician maintained that his wagon and harness came under this designation, and tried to recover them from the sheriff. The Court, in deciding the question, which is an important one, does not settle the particular case, but refers it to a jury. The legal principles involved are of interest, and we quote from the decision as follows:

"The Court can not say, as a matter of law, that a wagon or a harness is a tool of a physician's calling, and so exempt to all physicians; nor can they say that it is not such a tool. The most that can be said, as a matter of law, is, that it may be a tool of his profession if, in the particular case, it is reasonably necessary for him to use it as a tool. If it should appear that his practice was confined to his office, or that he was a physician or surgeon in a hospital, attending to no cases outside of the institution, or that he was a surgeon on ship-board, or that he went on foot or on horseback, or on the cars, to visit his patients, a wagon and harness would not be exempt under our statute, because they would be of no use to him as tools in his practice. They might be of use to him in other respects, as in going to church, or in carrying his children to school, or in visiting friends, or as a means of recreation and pleasure; but these uses are manifestly not within the legitimate scope of the technical duty of a physician. Not coming within the strict definition of the term tools, and not being reasonably necessary as tools for him in his practice of his profession, they would not be tools within the meaning of the statute, and so would not be exempt as such. But if it should be found that the physician claiming the exemption could not practice his profession with reasonable success without a team with which to visit his patients; that he was located in a country town, for example, where it was necessary for him to ride a large part of the time in order to accomplish anything professionally, a wagon and harness might properly be found to be reasonably necessary for him as tools of his occupation. But the finding would be one of fact, so far as the reasonableness of the use is concerned; and it could not be said that these articles are exempt to every physician, or to physicians generally, but only to the debtor in the particular case. If there is any doubt whether an article claimed to be exempt from attachment is a tool under the statute, the question should be submitted to the jury whether its use as a tool by the debtor in his business is reasonably necessary. If it is, it is exempt; otherwise, it is not exempt."

The Management of the Placenta.—In a paper read before the Ohio State Medical Society ("Columbus Med. Jour.," Aug., 1884), Dr. J. C. Reeve, of Dayton, expressed his views as follows:

Although, over and over again, in lists of cases of inversion "pulling at the cord by the midwife" is given as the cause, I believe that in many cases this is pure assumption, and that in the majority it is gross injustice. The annals of obstetrics show that ignorant midwives have done all sorts of outrageous things, but, when it comes to inverting the uterus by pulling at the cord, the physician is certainly more likely to do it than a midwife. He pulls in the axis of the straits of the pelvis, of which she knows nothing, and a large portion of the force she applies is expended in drawing the cord against the pubes. I presume there are few members here who have not been called to cases where the cord has been torn off in attempts to deliver the after-birth, and all know how fragile it is and how easily it gives way. There must be a favoring condition of the uterus, a state of complete inertia, as the prime factor in the process whenever traction on the cord has been effective in causing inversion.

If this serious accident of childbirth is to be referred to modes of delivering the placenta, I take the ground that it is quite as likely to result from the present accepted mode—Credé's—as by pulling at the cord. Given the state of inertia of the uterus just referred to, which is one of the conditions for inversion, and pressure on its external surface can not fail to produce a dimpling or depression of the fundus which then, by the well-known process, becomes complete inversion.

Possibly I shall be indicted for intimating that a process so generally followed and so universally lauded may not be perfect. But I do not hesitate to say that Credé's method can not always be carried out; it is not always possible to grasp the uterus and apply pressure generally over its surface, or over the major part of it; and I take the position that, if the pressure is applied to a portion of the uterine globe, it is liable to produce depression of the walls, the initial step of inversion; that if Credé's method is unskillfully performed it is as likely to cause disaster as is delivery of the placenta by traction. Recently a good many voices have been heard to the intent that Credé's method is not perfect, and there are cases on record showing that it has been effective in producing uterine inversion. In a debate at the London Obstetrical Society Dr. Edis called attention to the increasing frequency of uterine inversion, and stated his belief that it was due to the employment of too much or ill-directed force in the expulsion of the placenta according to Credé's method. Spiegelberg recognizes expression of the placenta as a cause of inversion, and gives references to cases. Mundé, in this country, has expressed his dissatisfaction with Credé's method. Many of Credé's countrymen have written against it. And I must add that, when Credé states that in two thousand labors "the average duration of the third stage was only four minutes and a half," he writes down his own condemnation. This is not nature. Smellie recognized the truth. For the safe delivery of the placenta we must wait a while; allow the uterus a time of rest; give its fibers time to undergo tonic contraction, and its ganglionic centers time to gather power for the final effort. With clear recognition of the physiological process we can render intelligent and efficient aid in pathological conditions.

No teaching as to the delivery of the placenta can be scientific which does not direct a consideration of the character of the preceding labor, and as the character of labors varies, so must the management of the third stage. If the pains have been frequent and energetic and the birth of the child rapid, the placenta may be delivered very soon; if the labor has been tedious and delivery slow, or if the uterus has been exhausted by violent and long-continued effort, time must be given for the recuperation of its contractile force and nervous energy.

Recent Lyons Theses.—"F Lyon médical" gives the following list of these presented to the faculty of that city during the months of June and July, 1884: No. 214, Corelysis—A Clinical and Critical Study of Förster's Method, by M. G. Souquière; No. 215, The Mode of Action of the Forceps, by M. L. Thassard-Haste; No. 216, The Treatment of Puerperal Fever with Cold Baths, by M. P. Chabert; No. 217, General Pseudo-paralyses, by M. L. Blache; No. 218, The Treatment of Pneumonia with Cold Baths, by M. C. Goumy; No. 219, An Experimental Study of the Virus of Puerperal Septicæmia, by M. C. Truchot; No. 220, A New Process of Mixed Anæsthesia, by M. F. Colombel; No. 221, Choreiform Movements in General Paralytics, by M. J. Sage; No. 222, The Resorption Fever of Phthisical Persons, by M. F. Rolland; No. 223, The History and Development of Legal Medicine, by M. C. Masson; No. 224, The Normal Movements of the Eyelids, by M. A. Domeek; No. 225, Vaginal Hematocele, by M. L. Roché; No. 226, Two Cases of Hystero-epilepsy, by M. C. Burgat; No. 227, The *Bruit de galop*, by M. P. Charvet; No. 228, *Asphyxia locale* of the Extremities, by M. J. Eparvier; No. 229, Indirect Fractures of the Ulna and Fractures of the Radius by Torsion, by M. F. Brossard; No. 230, Anal Fistula, by M. N. Franco; No. 231, Vaccinal Contaminations, by M. E. Jossarand; No. 232, Sprain of the Foot and its Treatment, by M. A. Vaqué; No. 233, Acute Delirium of the Typhoid Form, by M. A. Rousset; No. 234, The Influence of Prostatic Hypertrophy on Strictures of the Urethra, by M. P. Liénard; No. 235, The Cholera of 1884, observed at the Toulon Naval Hospital, from June 18th to July 18th, by M. M. Randon; No. 236, Cancer of the Pancreas, by M. J. Vernay; No. 237, Rectal Etherization and its Dangers, by M. P. A. Héron; No. 238, Precocious Cancer of the Stomach, by M. M. Mathieu; No. 239, Hydrarthrosis of the Knee after Fractures of the Thigh, by M. J. Barudel; No. 240, Complete Deflection of the Course of the Intestinal Contents in the Treatment of Cancer of the Rectum, by M. A. Lagauite; No. 241, The Therapeutical Use of Hydrochlorate of Kairine, by M. E. Drély.

Original Communications.

RECENT STUDIES ON
THE THEORY OF THE MICROSCOPE,
AND THEIR PRACTICAL RESULTS AS REGARDS THE USE OF
THE MICROSCOPE IN SCIENTIFIC INVESTIGATIONS.*

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Few who are not constant readers of the literature pertaining to the physics of the microscope are aware of the great advances that have been made in the knowledge of the microscope as a physical instrument, and of the correspondingly great progress in the construction of the optical part due to such knowledge that has been made within the last ten years. Nevertheless, the subject is of great importance to every observer, and, although to make it clearly understood it should be treated mathematically, in a manner which the author of this paper would not undertake, it has seemed desirable to present the salient features of our knowledge of the microscope as a physical instrument in a manner to indicate fairly well the bearing of recent researches upon the scientific use of the instrument. To do this for the benefit of the biologist, histologist, and others whose time and interests have been too much occupied with their work to study the merits of different objectives and accessories, makes it advisable that we should begin with some explanations with which many here present are familiar.

Probably every observer of experience has a more or less clear recollection of the long and bitterly-fought battle which raged among microscopists not many years ago about angular aperture. There were advocates of wide or high angles who believed the value of an objective increased with the angular aperture, and this view was advocated with all the steadfastness and vigor of such faith as would move mountains had it been properly directed to that end. On the other hand, there was a more conservative, but none the less vigorous, party totally opposed to these views. The bitterness with which this controversy was carried on at times, year after year, is a blot upon the literature of the subject. But the differences of opinion arose partly, no doubt, from stubbornness and erroneous observation, but mainly from want of knowledge concerning the subject. There was no recognition of a standard by which the value of an objective could be determined. It was a controversy, in fact, between those who believed in tests by resolving fine markings on diatoms, etc., and those who believed in clear definition of such objects as the podura scale. To be sure, other elements entered into the controversy, as, for instance, the question of the proper measurement of the angle of aperture; but the great question of interest to workers with the microscope was, What is the best objective for use, a wide or medium angle?

At the present time this question can be answered; but a few years ago it was purely a matter of opinion. The

theory of the microscope then generally accepted was erroneous. The functions of angular aperture were, in theory, entirely misunderstood.

Let us endeavor to understand the subject in the light of recent investigations, for which we are mainly indebted to Professor Dr. E. Abbe, of Jena, who has established a theory of the microscope, based upon experimental and mathematical investigations, which, in its essential features, if not throughout, seems as firmly established as any theory in optical science.

When an object marked with fine striæ—such as a diatom-shell, for example, or a glass plate ruled with lines, and having the markings separated by spaces as minute as a wave-length of light—is illuminated in the ordinary way under the microscope, it is obvious that the light will be decomposed and a diffraction spectrum formed, precisely as in the case of Professor Rowland's beautiful ruled plates. Considering any single ray from the mirror, when it reaches such an object it will be turned from its direct course and pass off at an angle, forming a microscopic diffraction spectrum. This spectrum may be seen and examined in a manner to be described further on. First, I must ask you to recall some old experiments given in text-books on physics. I refer to the interference bands of diffraction spectra. You will remember how the waves of light, when their vibrations come together in a certain manner, interfere with each other and produce lines of darkness due to overlapping spectra. I can not go further into this subject here. The principle has been brought before you, and that is sufficient for the purpose in view. It must be clear to any one that, if the light is thus turned from its course and decomposed, it can not go on to form an image in the microscope as it was supposed to do according to the old theory of the microscope. It was then supposed that the microscope formed an image precisely as figured in works on physics in use at the present day, and in the same manner as the telescope. Large objects, and outlines of objects generally, are imaged in this way; but, obviously, this can not be true of the fine markings closer than a wave-length of light.

Let us see what becomes of the diffracted rays forming the spectrum. Place a dry-mounted specimen of *Pleurosigma formosum* under a microscope, and examine it with a half-inch objective. When the markings are distinctly seen, remove the ocular and look down the tube of the microscope. There will be seen the diffraction spectra just above the objective. Then put on the ocular, and with a hand-lens examine the light which issues from it in the same way. There the same spectra will be found again. I will not attempt to explain how it is that these spectra are combined in the image we see to produce the appearance of lines or dots, as the case may be. The subject is too intricate to be easily understood; but the fact must be taken, upon the authority of Professor Abbe and others, that the power of a microscope to define or resolve minute markings is absolutely dependent upon its capability of gathering in and properly disposing of the spectra produced by the object.

We will now go a step further in the consideration of the formation of the spectra. You are all familiar with the

* Read before the American Association for the Advancement of Science, September 5, 1884.

fact that diffraction spectra are of different orders—that is to say, we have several secondary spectra produced, one beyond the other, more or less overlapping each other. So it is under the microscope, and the number of secondary spectra will depend upon the fineness of the markings of the object and the length of the vibrations of the light (which will vary in different mounting media). It scarcely need be said that, when the object is so finely marked as to produce two spectra, the microscope must take in both of these to reveal its finest lines, and, if the object produces three spectra that are essential to show its structure, the microscope must take the third in also. Since the rays forming the second and third spectra are diffracted, respectively, farther from their courses than the others, it is obvious that the capability of an objective to take them in depends upon its angular aperture—the angle of light which it will take in under the conditions of experiment.

We now come to an interesting and exceedingly important fact concerning the appearances produced by diffraction spectra. If an objective is incapable of taking in the spectra necessary for a true portrayal of the object, it may, nevertheless, be made to give an image which, to all appearances, is true, and would not give any evidences of further details to be brought out by other lenses. It may also happen that, by proper manipulation, an objective capable of showing the finest markings of an object may be made to show the object clearly defined with only one half the true number of markings—the structure appearing to be much coarser than it really is.

It may be asked how it is possible, in view of such facts as these, to place great dependence upon the microscopical appearance of objects; how are we to be sure that the resolutions we see of fine markings are true? How do we ever know that the objectives we use are capable of showing true structure, or that our manipulation of them has given us the true and not the false?

It is not my purpose to enter upon a discussion of these questions. It would require too much time and involve a more full discussion of the theory of the microscope. Sufficient has been said to place the observer on his guard against errors of this kind. In some cases structure can not be known from microscopical examination.

We now come to the consideration of angular aperture. The cone of rays radiating from the focal point of the objective to the periphery of the front lens is the angular aperture—the angle of light it will receive.

Suppose an object to produce a diffraction spectrum just beyond the range of a certain objective working in air. Interpose a refractive medium like glycerin or water between the object and the front lens. The rays which before were beyond the range of the objective are now brought, by refraction, to a smaller angular deviation, the spectrum is taken up by the objective, and the markings are resolved. We can thus understand the action and the advantages of immersion objectives. It has long been an axiom with microscopists that resolution of fine lines is dependent upon angular aperture, but in this case the immersion medium has materially lessened the angular aperture, yet the resolving power of the lens is increased. Nevertheless, the angu-

lar aperture has been shown, under the conditions previously mentioned, to determine the resolving power. The apparent discrepancy here is easily explained, although it has caused interminable confusion in the past. The explanation in brief is this: Angular apertures can only be compared under the same conditions. Thus, angular apertures of objectives working dry, or of objectives working in the same immersion fluids, can be compared among themselves, but those of one class can not be compared with those of the other class. Thus, a dry objective of 157° will resolve no more than one having an immersion angle in water of 94° , or in oil of 80° .

It will be seen that such comparisons are apt to be very confusing, and for this reason the term angular aperture might better be entirely discarded. A perfectly satisfactory method of designating the resolving power of an objective has been adopted by microscopists on the recommendation of Professor Abbe. It is by determining the "numerical aperture." In highly refractive media the undulations of light become much shorter than in air, and, as the capabilities of the microscope are dependent upon the wave-lengths, it is obvious that dense media for mounting add to the resolving power. Moreover, the visibility of an object is affected by the relation between the refractive indices of the object and the mounting medium. The more these differ, the more visible the object will be. But time would not permit, even if it were desirable, a longer discussion of the optical action of mounting media of different refractive powers. Suffice it to say that Professor Abbe has shown, both by experiment and calculation, that the true aperture—distinguished, when desirable, as the numerical aperture of a microscope objective—which is the capacity of the objective to receive rays from an object to form an image, is the ratio between the focal distance and the diameter of the back-lens of an objective. This ratio will depend upon the refractive index of the medium of immersion, and is expressed by the product of the index of refraction multiplied by the sine of half the angle of aperture for the particular immersion medium employed. This is expressed by the much-used formula $n \sin. u$.

Since the resolving power of a microscope depends upon its numerical aperture and upon the wave-length of light, it must be clear to any person that, when the markings of an object are so exceedingly minute that they can no longer produce the diffraction spectra necessary to form a correct image, they are beyond the range of microscopic vision. It will also be understood that, since it is a matter involving the wave-length of light, the use of optically dense media to reduce the amplitude of the vibrations of light adds to the resolving power of the microscope. Likewise, finer details can be made out with blue rays than with red, and structures finer than the eye can see may be photographed.

The limit of resolving power has been calculated for different media and apertures, ranging from 1.52 —which is, theoretically, the highest attainable with an immersion medium of refractive index 1.52 , since it corresponds to 180° of angular aperture in that medium—down to 0.50 , and a table giving the figures is regularly published in the "American Monthly Microscopical Journal." The range of resolving

power at present attained in practice scarcely exceeds 112,000 lines to the inch,* which should, theoretically, be attained with an aperture of 1.16, but the optical construction does not permit of the attainment of theoretical perfection. The highest numerical aperture to be obtained from the opticians is about 1.43.

Before entering upon another, and perhaps more generally interesting, part of the subject before us, I would wish to draw your attention to a fact that can not be too strongly brought forward. From what has been said concerning the formation of images of minute markings by the decomposition of the light and the production of spectra, it will be readily inferred that whatever objects will form identical spectral images, no matter how different the structure of the objects themselves may be, their appearance in the microscope will be the same. As a single example to illustrate the practical bearing of this fact, we may consider the resolution of any finely marked diatom. By changing the illumination, the dots may become lines, or the lines in some cases may be made to appear twice as close or half as close as they really are. Time does not permit me to enlarge upon this subject as I would wish, but it has an important bearing upon our interpretation of the revelations of the microscope.

We have already seen that there is a theoretical as well as practical limit to the power of a microscope to separate fine lines. This limit is determined, first, by the numerical aperture of the objective, and, secondly, by the magnifying power of objective and ocular combined, which in every case must be sufficient to separate the lines in the image until they subtend an angle large enough to enable the eye to distinguish them. This amplification attained, supposing the resolving power of the objective to be tested to its highest limit, no further amplification can possibly reveal any finer details in the image. Nevertheless, a slight increase is desirable to render the details more distinct, as all who work with delicate test-objects well know. There is, therefore, a well-defined relation between numerical aperture and amplification which renders it possible to define the limits of adequate and desirable amplification for every objective. A recognition of this fact will show that the use of oculars of excessively short focal length, or high power, must be extremely limited in scientific investigation.

Passing now from the microscope itself, what has been said will enable us to appreciate the value of certain accessories for illuminating objects under investigation. It was not many years ago that the most valued, and likewise the most costly, apparatus for illuminating objects for high powers was the achromatic condenser, made very much like an objective, with a small front-lens, and a complicated system of diaphragms beneath. Fortunately, such costly appliances are no longer necessary, and, although achromatic condensers are still made, their form is quite different from those in general use ten years ago.

For the scientific student there is no device more generally useful than the Abbe illuminator, with its full comple-

ment of diaphragms. It is not strictly achromatic, but that is of no consequence. It is not costly, compared with other forms, and is well adapted for universal use. It gives the observer complete control over the light, and is a great aid in all delicate observation. I feel like dwelling longer upon this subject, to urge the use of this apparatus upon our scientific students. I am aware how many of them affect to despise all accessories. It is because they do not know their value. It will not do to say such things are of no use merely because they have not felt the need of them, for such persons do not know of what they speak. The true student of science should be quick to take advantage of every aid afforded by the optician's skill; as to the practical value of the Abbe condenser there can be but one opinion.

Reasoning from what has been said concerning the theory of the microscope, it will be obvious that a careful management of the illumination is essential to the best results in microscopical work. The mirror alone can be made to do almost everything, but it must be handled with far more skill than most scientific observers possess. They do not acquire such skill in the work that occupies their attention, and for that reason they fail to use the microscope to the best advantage. Not only is this true, but their experience as observers is often too much restricted, and I have known persons of undoubted ability in certain lines of work to make surprising blunders, due to misinterpretations of images in the microscope, which no person of broader experience would make. It is a great advantage to any observer to be able to resolve fine test-objects, as such work not only gives command over the instrument, but teaches one how to get the clearest definition and how to avoid or detect false appearances. The use of the Abbe illuminator greatly facilitates the management of the light, and often brings out details of structure very clearly that would otherwise be very easily passed without notice.

The use of polarized light in connection with the microscope is of great importance to the mineralogist, who is enabled to study the optical properties of minerals as they occur in rocks in microscopic quantities. The ordinary arrangements for polarized light serve well enough for such purposes, and for the ordinary requirements of the microscopist. A far more elaborate and delicate apparatus for studying the optical properties of minute objects is the polari-spectro-microscope of Rollet,* or the spectro-polarizer of Zeiss,† which serves the same purpose and can be attached to the ordinary microscope. Both these instruments consist of a polarizing prism, a dispersing prism to form a spectrum of the polarized light, and a plate of selenite. The different colors of the spectrum can be made to traverse the field of view in succession. The mica produces dark bands of interference, the position of which depends upon the thickness of the selenite. An object possessing the slightest property of double refraction, such as a piece of muscle, for example, when placed in one of the dark bands, adds to the thickness of the selenite, and in certain azimuths becomes luminous in the dark band. These instruments are

* One hundred and twenty thousand has been alleged, but we are not satisfied with the evidence in support of this rather improbable feat.

* "Am. Monthly Micr. Journ.," iv, 168.

† *Loc. cit.*, iv, 174.

undoubtedly the most delicate means we have of studying the optical properties of minute objects, and their value is enhanced by the ease with which the wave-lengths of the light used can be measured. The relation between resolution of fine lines and the wave-length of light makes it obvious that with blue light finer details can be seen than with light of lower refrangibility. Also that finer details may be photographed than can be seen. The usual method of obtaining monochromatic light is by the use of a colored glass or liquid interposed in the path of the rays. A more elaborate device has been constructed by Mr. Zeiss. In this, two prisms are mounted, as for a spectroscope, in such a manner as to throw a spectrum upon the object under the microscope, which may then be examined in light of any color.

REPORT OF A CASE OF STRICTURE OF THE ŒSOPHAGUS.*

By RUFUS P. LINCOLN, M. D.

The patient whose history furnishes the subject of this report was fifty years old, a native of Hayti. He arrived in this city the last of June, 1883, and was referred to me by Dr. Otis. He was then suffering from aphonia, a moderate amount of dyspnoea, and dysphagia, with regurgitation of food into the nares, and vague pains in the neck, sometimes shooting up to the ears, and in the upper part of the chest.

These symptoms, according to the patient's account, had been present, with varying degrees of intensity, during the previous eighteen months.

He had spent about half his life in Europe—always a good liver, he was temperate in all things but the use of tobacco. For many years he had smoked from fifteen to twenty strong cigars daily, occupying the interval of smokes with an occasional pinch of snuff.

In the summer of 1882, while traveling in Switzerland, in consequence of exposure to a cold rain at night at a railroad station, he contracted a severe attack of rhinitis, pharyngitis, and laryngitis. Skillful treatment in Paris soon relieved him of the principal symptoms of this attack.

He at this time experienced the first symptoms of obstruction to breathing, which was then pronounced asthma. There was also some difficulty in swallowing. He was never afterward entirely free from this "ball in his throat," as he described it.

On arrival at Cape Hayti, in September, 1882, his disease was pronounced "syphilitic laryngitis," and he was put on a course of four grammes of the iodide of potash daily. He was also treated locally, by means of the brush, with tannin, alum, and nitrate of silver, one after the other. He insisted that this treatment always aggravated his distress, and kept the pharynx looking like "raw beef-steak." His voice gradually became hoarse until, March, 1883, when he was aphonic, and much troubled by choking when he attempted to swallow anything.

On inspection of the neck, there presented anteriorly a

general fullness, extending from the cricoid cartilage down to the sternal notch. The thyroid body was enlarged, and on either side, extending under the edge of the sterno-cleido-mastoid muscles, there were enlarged glands that were movable, one on the right side near the clavicle being painful to pressure, and more firmly fixed than the others.

On examining through the mouth, the pharynx was found congested, the epiglottis red and thickened, the whole larynx stenosed, especially on the left side, where the arytenoid was so much hypertrophied as to be immovable on attempted phonation, thus preventing action of the corresponding vocal cord, while the right approximated the median line.

On account of the extreme sensitiveness of the pharynx and larynx, the œsophagus was not explored with sounds, but an obstruction was readily located on auscultation while the patient swallowed water, opposite the seventh cervical and first dorsal vertebræ. With care, liquids and finely masticated food could be swallowed, though this often induced coughing and forcing of food into the nares.

The patient was at this time under observation about a month, during which time there were two attacks of a chill, followed by fever, repeated daily for three days, and yielding to full doses of quinine.

The stenosis of the larynx improved, so that the voice was normal and respiration no longer embarrassed; swallowing was also better performed, so that food other than liquids, if thoroughly masticated, was freely taken. The pharynx and epiglottis resumed their natural appearance; exteriorly the general fullness of the neck and the thyroid gland, above referred to, had subsided, the enlarged cervical glands, however, being but little diminished in size, though they were perceptibly softer, smaller, and no longer tender to pressure.

The patient was again seen in September, he having spent the interval comfortably, gaining flesh and strength, in Richfield Springs. There had been, however, within a short time a gradual recurrence of the former symptoms, except that the voice was unchanged. During the last week in September the quantity of food swallowed amounted to scarcely anything, and the respiration became alarmingly difficult (though there was no aphonia), so that the skin was somewhat cyanosed, and there was some delirium. These urgent symptoms in respiration yielded after two or three days, but not so the obstruction to deglutition. Attempts to pass œsophageal sounds and bougies, even the smallest, were not successful in penetrating entirely through the stricture, and were always followed by much inflammatory reaction. Dr. Otis was present and participated in several of these efforts.

November 3d I passed a metallic sound entirely through the stricture, but so much inflammation followed that the attempt was not repeated till November 13th, when Dr. Weir was present and passed a bulb-pointed catheter, size No. 22, with little difficulty. One goblet of milk-punch was injected into the stomach, and an hour later this was repeated, the catheter remaining in the œsophagus in the mean time.

The pulse at this visit was 110, and there was no rise in temperature. After chatting an hour, the patient went to

* Read before the American Laryngological Association, May 13, 1884.

sleep and slept undisturbed three hours, till 12 P. M. On waking he was much agitated, and complained of palpitation and rapid breathing. I saw him at 5.30 the following morning, and found the pulse 160, and the respiration 60 and panting. Some whisky and water was swallowed, and an enema of beef-peptonoid with whisky administered, but the patient expired about 9 A. M.

During the last six weeks of his life the patient was chiefly nourished by three nutrient enemata daily, inunctions of cod-liver oil, and hypodermic injections of cod-liver oil, amounting to from a half ounce to one ounce daily.

An autopsy was made, with the assistance of Dr. C. D. Seudder, six hours after death. Rigor mortis well marked. Emaciation not extreme. Of the organs examined, the heart, lungs, stomach, and liver appeared normal. The larynx, trachea, and œsophagus I here exhibit.

Specimens of the morbid tissues were sent to Dr. Heitzman and Dr. William H. Welch, both of whom unite in diagnosing medullary cancer. The following is the substance of Dr. Welch's report.

Cancerous deposit found in the anterior wall of the œsophagus, near its commencement, and the infiltration slowly spread, until about two inches and a half of the surface were involved. This deposit spread laterally, and by contiguity the deep portion of the œsophageal wall was also infiltrated with cancerous matter, which subsequently affected the posterior and lateral walls of the lower part of the larynx and upper part of the trachea, giving rise to the numerous nodules seen there; these have coalesced to a great extent, especially posteriorly. The cervical lymphatic glands shared in the disease, as is usual with cancer, and infiltration took place into the tissues surrounding them, involving the vagi nerves.

The dysphagia and aphonia were produced by local cancerous material in the œsophagus, larynx, and trachea, and by the diffused cancer that involved the laryngeal and œsophageal branches of the vagi. Death finally resulted from affection of the cardiac branches by the same cancerous deposit.

DISCUSSION.

Dr. ROE—I have left a pharyngeal tube permanently in the œsophagus of patients suffering from cancerous stricture, in one instance having allowed it to remain for over one hundred days without removal. Since other than malignant cases have been mentioned, I will refer to two cases in which I have performed internal œsophagotomy with success. Several more, in the hands of other operators, are on record. In my first case the stricture originally was of large size, and was kept open for over a year by the passage of bougies. Finally, however, dysphagia became so serious that I performed internal œsophagotomy. The patient was able immediately to swallow without difficulty. Bougies were passed for about four months, but, no tendency to recontraction having been shown, their use was discontinued. The operation was done about eighteen months ago.

The other case was that of a woman, and the operation was successful. Where appropriate, I think internal œsophagotomy should always be preferred to gastrostomy. I believe there are only two or three patients now living who have survived gastrostomy as long as one or two years.

Dr. KNIGHT—I think that before resorting to gastrostomy

we should bear in mind the fact that the patient must afterward lead a very miserable existence, and that, in the case of malignant disease, life could be prolonged but a short time any way. I would not resort to the operation unless there were some special reason for prolonging life.

Dr. DONALDSON—I can not think it necessary to resort to so serious an operation as gastrostomy in cases of stricture of the œsophagus from adhesive inflammation resulting from caustic fluids. In the case of a child, two years of age, who swallowed concentrated lye, and in whom, two weeks later, it was found that there were two strictures of the œsophagus—one about the level of the seventh cervical vertebra, the other near the cardiac orifice of the stomach—soft œsophageal bougies were introduced, more or less continuously, for over two years, the œsophagus being thereby kept open. In another similar case I would keep the œsophagus open by allowing a perforated tube to remain in, as has been done by others. Of course, no force should be used in introducing the tube, for fear of rupture.

Dr. INGALLS—I consider the plan suggested by Dr. Donaldson a good one in some cases, but it is not always free from danger. I recall the case of a child who swallowed caustic, resulting in stricture of the œsophagus, for which a surgeon passed a bougie several times. On one occasion the bougie caused considerable pain, and, the pain persisting, I was called late in the day, and found the child suffering from pneumothorax. Death took place the next morning, and at the post-mortem it was found the bougie had made a false passage, and entered the left pleura.

Dr. DALY—I hope that the next time Dr. Lincoln has occasion to treat a case of this kind he will undertake the operation of gastrostomy, which has been done so successfully in Germany. Some two or three cases of stricture of the œsophagus, due to the swallowing of caustic potash, or other cause, have fallen under my care, and I have regretted that I have not had an opportunity to perform gastrostomy, but I would not hesitate to do the operation in the future.

In closing, Dr. LINCOLN said—In reply to Dr. Roe's criticism that bougies should have been left *in situ*, it should be borne in mind that any attempt at interference with the œsophagus, at least sufficient to pass a sound, was always followed by great inflammatory reaction; moreover, there was a prompt improvement that attended the soothing treatment at first instituted which seemed to justify its continuance.

As to Dr. Daly's suggestion that gastrostomy might have been tried, I wish to say that, while the statistics of operations so far reported give but little encouragement for adopting this method in any case, certainly the sequel in this case shows it would have been useless, death having been due to implication of the cardiac branches of the vagi nerves by the disease.

THE TREATMENT OF PHTHISICAL NIGHT-SWEATS.

By C. M. CAULDWELL, M.D.,

VISITING PHYSICIAN TO ST. JOSEPH'S HOSPITAL; INSTRUCTOR AT THE NEW YORK POLYCLINIC.

In the hope of obtaining a remedy which would permanently control the exhausting night-sweats of phthisis, I have made a series of experiments with several recognized remedies. These experiments have extended through a period of two years, with the results given below.

The ideal sought for was a drug which would not only accomplish the desired end, but which would do so *without* producing unpleasant symptoms, or in any way depressing the general condition of the patient.

Appropriate cases for experimental purposes were selected from five hundred patients suffering from chronic thoracic disease, in my charge at St. Joseph's Hospital, the New York Polyclinic, and the Northwestern Dispensary.

Care was taken to keep the patients upon the same general treatment during the trial of the various anti-sweating remedies.

This consisted of cod-liver oil, hypophosphites of lime and sodium, cinchonidine, and iron when not contra-indicated.

Atropine, ergotin, salicin, digitalis, aconite, oxide of zinc, paracoto bark, and picrotoxin were among the more important drugs selected for trial.

Each drug was tested in from fifteen to twenty-five cases.

Atropine, when given in sufficient quantity to check the perspirations, frequently produced annoying throat dryness, insomnia, anorexia, or diarrhoea. Moreover, in the majority of cases where it agreed, the sweating would reappear as soon as the drug was discontinued. The amount prescribed in twenty-four hours varied from one sixtieth to one twentieth of a grain.

Ergotin, which was strongly recommended by Professor Da Costa in a very interesting lecture, published in the "Medical News" for August, 1881, failed completely in my hands. It made considerable impression on the sweating, but, in almost every instance, produced either nausea, colicky abdominal pain, or some other form of gastro-intestinal disturbance. It was administered in gelatin-coated pills, from three to eight grains, in divided doses, being given in twenty-four hours.

Digitalis, even in large doses, although of great value in other respects, gave neither prompt nor encouraging results so far as the perspirations were concerned. The solid extract was the preparation used. From three to six grains were taken in twenty-four hours.

Aconite, recommended by homœopathic writers, greatly modified the sweats. It did this without producing unpleasant symptoms, but, as a rule, it gradually lost its power, and the troublesome symptom returned. One eighth of a drop of the tincture was given every hour or two, from ten o'clock in the morning till ten in the evening.

Paracoto bark, so highly praised by several English physicians, acted with remarkable promptness in a number of cases. In others it gave little or no relief. It had a tendency to constipate. When diarrhoea and sweating were associated, it was most satisfactory. The preparation employed was a fluid extract prepared by Parke, Davis & Co. From twenty to forty drops were given three times daily.

Salicin proved eminently unreliable, and apparently increased the debility of many patients when continued for more than a week. From one to two drachms were given in twenty-four hours.

Oxide of zinc, though increased to half-drachm doses, manifested but feeble and uncertain controlling power.

Picrotoxin, recommended by Dr. Ringer and Dr. Murrel, more nearly approached the ideal in view than any of the other drugs. It was prescribed for twenty consumptives suffering from profuse night-sweats. In seventeen of the

cases the perspirations were entirely checked, or so far diminished as to produce no further debility or annoyance. Even when given in much larger doses than are ordinarily prescribed, it caused no disturbance of the nervous system or of the gastro-intestinal tract—in fact, produced no evil effect whatever. In this respect it compared very favorably with atropine, ergotin, etc. A single full dose of the drug at bed-time was generally sufficient to control the sweating for twenty-four hours.

Where one dose failed, a second was taken shortly after midnight.

The initial dose, mentioned by Ringer and the English writers generally, is the one hundred and fiftieth of a grain.

This was found much too small, and was accordingly increased to one fortieth of a grain.

The following notes of five typical cases treated with picrotoxin will best illustrate the doses used, the length of time the treatment was continued, the permanency of effects, and the class of patients chosen for experiment. It will be noticed that Cases I and V represent the consumptives whose sweating is apparently due to nervous debility, while the same symptom in Cases II and IV is merely a part of a septic fever. It is curious that the same remedy should influence symptoms with such different causes.

CASE I.—Laryngeal Phthisis with Slight Infiltration of Left Apex.—R. T., male, aged twenty-eight years, marble polisher. Father died of "consumption of the throat." Patient's general condition is fair, digestion good, cough dry and laryngeal, very slight rise of temperature in the evening, but each night has so profuse a sweat that bed-clothing, mattress, and pillows are thoroughly soaked. Quinine, ergotin, sage tea, and paracoto bark have failed to relieve. Atropine, in heroic doses, lessened the perspirations, but rendered the patient delirious and greatly aggravated the laryngeal symptoms.

February 14th and 15th.—Took one fortieth of a grain of picrotoxin. Had very profuse sweats during both nights.

16th.—Doubled the dose. No sweating.

17th.—Same dose. Moderate sweats toward morning.

25th.—Since last note has continued the same amount. Sweats have almost ceased. Dose to be gradually diminished.

March 1st.—Sweating entirely disappeared. Discontinue drug.

May 1st.—No return of perspirations since last note—a period of two months—although the patient has not gained ground during that time.

CASE II.—Large Cavity in Upper Third of Left Lung.—M. C., female, aged twenty-six years, housewife. Family history good. Patient's last child was born four months ago; since that time she has been running down rapidly. Is now very feeble, much emaciated, no appetite, severe cough, profuse expectoration, chills, high fever, and each night an exhausting general sweat. Quinine, atropine, and aconite have been "tried and found wanting."

January 1st.—Take picrotoxin (gr. $\frac{1}{40}$ at bed-time) for one week.

8th.—Has perspired almost every night, but much less profusely. Continue treatment.

15th.—Sweats have nearly ceased and now give no trouble. Gradually diminish the dose.

April 5d.—No sweating during the past two months. Patient improved beyond expectation. Lung symptoms all subsided. Physical signs of dry cavity remain.

CASE III.—*Extensive Infiltration of Both Upper Lobes.*—R. Q., female, aged twenty-six years, seamstress. Mother and a sister died of "quick consumption." For five months the patient has not menstruated, and has failed steadily, with phthisical symptoms. Now greatly emaciated, bed-ridden, has occasional diarrhœa, severe cough, profuse expectoration, and, during sleep, a perspiration sufficient to saturate her clothing, pillow, sheets, etc. Full doses of atropine control this symptom, but aggravate the cough and produce diarrhœa. Quinine does not relieve. Ergotin checks the sweats, but causes vomiting and colic.

December 27th.—Give picrotoxin (gr. $\frac{1}{16}$) at bed-time for a week.

January 6th.—Sweating considerably diminished. Continue treatment.

16th.—Though the girl is slowly sinking, the sweating has practically ceased. Suspend treatment.

March 15th.—No return of sweating for the past two months, although she has grown steadily worse, and is now about to change worlds.

CASE IV.—*Large Cavity in Upper Lobe of Right Lung.*—G. W., male, aged twenty-nine years, shoemaker. Family history of phthisis. Patient has been "going into a decline" for over a year. At present much emaciated, just able to get about his room, temperature high, irregular chills, constant cough with profuse expectoration, and copious "sleep sweats" followed by great prostration. Cinchonidine, zinc, salicin, and digitalis have failed. Atropine in sufficient doses to check this symptom produced delirium.

December 20th.—Ordered picrotoxin in one-eightieth grain doses three times a day for a week.

26th.—Sweating has been more profuse than ever before. Give one twentieth of a grain at bed-time for a week.

January 3d.—Sweating rapidly diminishing. Continue treatment.

9th.—No sweating. General condition much improved. Stop treatment.

March 24th.—No return of sweats for past six weeks. General improvement continues.

CASE V.—*Consolidation of Upper Third of Right Lung.*—J. S., male, aged twenty-six years, brewer. No family history of phthisis. Has had well-marked lung symptoms for six months. General condition fair, cough slight and dry, appetite and digestion good, temperature never reaches 101° F., but there is a drenching "sleep sweat" each night. Belladonna and sulphuric acid do not check this symptom.

November 1st.—Take picrotoxin each night for a week. Dose, one twentieth of a grain.

9th.—Sweating has diminished to slight moisture about the forehead and breast. Continue with one eightieth of a grain doses.

15th.—Sweating has ceased entirely. Stop picrotoxin.

January 25th.—During the past two months there has been no return of this symptom. General condition markedly improved.

71 WEST FIFTY-FIFTH STREET.

Changes in the German Faculties are announced as follows by the "Progrès médical": Dr. Wolff has been nominated an extraordinary professor at Berlin, and Dr. Hack at Freiburg; Dr. Frankel and Dr. Litten have been nominated ordinary professors at Berlin; Professor Grützer has been called to Tübingen, to take the place of Professor Vierordt; Dr. Mendel, a *Privat-Dozent* at Berlin, has been nominated extraordinary professor of psychiatry, and Dr. Tuzcek, of Marburg, has been made *Privat-Dozent* in the same branch; Professor Braun, of Heidelberg, has been called to the chair of clinical surgery at Jena.

LOSS OF AN EYE BY TRAUMATISM; A PHENOMENAL SYMPTOM.

By DAVID WEBSTER, M. D.,

PROFESSOR OF OPHTHALMOLOGY IN THE NEW YORK POLYCLINIC.

MR. G. L. C., a die-cutter, aged twenty-one, came under my observation on December 19, 1874. He stated that in the month of August, about four months previously, while cutting a die, the chisel broke, and one or more pieces of steel flew up and struck his right eyeball. The injury did not cause severe pain at the time, nor did it even temporarily destroy the sight, as he found that on closing his left eye he could see his hand with the injured one immediately after the blow. He placed himself under the care of a competent physician, and in ten days most of the pain and inflammatory symptoms had passed off, and a considerable amount of vision was restored.

Upon testing his vision I found

R. V. = $\frac{15}{100}$; no improvement with glasses.

L. V. = $\frac{20}{20}$, $\frac{20}{20}$ with — c. axis 10°.

The iris of the injured eye was discolored, and the pupil was dilated by atropine, which he had used daily since the injury.

Ophthalmoscopic examination showed whitish floating bodies all through the vitreous, probably the results of hæmorrhage with consecutive fatty degeneration. The left eye was ophthalmoscopically normal.

He was advised to stop treatment and resume work.

I examined him again on September 2, 1875, a little over a year after the injury, and found the conditions essentially the same.

He came to see me a third time on April 13, 1882, when I found that he had developed a cataract with total synechia posterior of the injured eye. The vision was reduced to perception of light, and that only in limited portions of the visual field. The vision of his left eye remained normal, but he had begun to be troubled by a "kind of floating shadow" before it. The injured eye was abnormally soft to the touch, and he said that it had been, at times, painful and bloodshot.

In a letter from the patient, dated March 19, 1883, after informing me that for some time back blood had, at times, appeared in the anterior chamber of the injured eye, but had disappeared on his quitting work, he went on to say:

About two weeks back it came on again. The blood would seem to come out at the lower edge of the iris, and, as I bent my head over my work, would almost cover it. I did not stop work this time, and it has not gone off. You will see by your book I said I could see something floating in my other eye. I think this has changed in some way. It gets in my way now as I work, and makes a blur in one little place. I can see as distinctly as ever, except when I bend my head over, and then I have to keep my eye moving if I wish to look very close.

I wrote to him advising enucleation, and on August 7, 1883, when he came to the city to have the operation performed, I made the following note:

The eyes remain generally about the same as at last visit, but are worse at times. The hæmorrhages into the anterior chamber of the injured eye have occurred at periods varying from one month to two or three months, and, when these come on, the other eye seems to sympathize, especially if he continues

working. He came into the office with his anterior chamber perfectly clear, and by leaning forward for a few minutes brought fresh blood into it which ran along the posterior surface of the cornea nearly to its center.

L. V. = $\frac{2}{3}$; $\frac{2}{3}$ with + $\frac{1}{4}$ c. axis 90°.

The ophthalmoscope reveals nothing in the left eye to account for the "floating shadow" of which he complains. There is no redness or tenderness on pressure of either eye.

The eye was now enucleated under ether, with the assistance of my friend, Dr. O. D. Pomeroy, who also witnessed the voluntary bringing of blood into the anterior chamber. It was placed in Müller's fluid.

The eye was examined by Dr. T. Mitchell Prudden, Pathologist to the Manhattan Eye and Ear Hospital, who reported as follows:

November 21, 1883.—The examination of the eye of G. L. C. results as follows: The cornea appears in all the parts examined to be normal. The anterior chamber contains a homogeneous coagulate, doubtless caused by the preservative fluid. In the extreme periphery of the anterior chamber are a few scattered red blood-cells. The iris is normal, except that a considerable number of pus cells are in places closely clustered along the walls of the smaller vessels. The posterior chamber contains numerous blood-cells. The anterior capsule of the lens, slightly separated from its body, is closely adherent to the edges of the pupillary opening. The substance of the lens, particularly in its anterior portion, is degenerated—larger and smaller ovoidal and irregular cavities filled with shining lumps of lens detritus. The laminae of the suspensory ligament of the lens are widely separated by an accumulation of fluid which contains a moderate number of red blood-cells, a small amount of free degenerated hemoglobin, and some granules of the same inclosed in small spheroidal cells (evidence of older hæmorrhages and degeneration of the blood pigment). The ciliary body is normal except for great congestion of the larger blood-vessels. In the anterior portion of the vitreous cavity are numerous larger and smaller collections of red blood-cells, a few small spheroidal cells, and large spheroidal cells, some of which contain degenerated blood pigment. Free granules of degenerated blood pigment are also present here. The remains of the vitreous are in general softened and disintegrated. Retina completely detached. The extra-retinal space is filled with fluid which contains red blood-cells and free granules of blood pigment. The detached retina shows in places the commencement of proliferative change and localized areas of œdema. Its outer layers are completely degenerated and the fibers of the same mingled with red blood-cells. The larger retinal blood-vessels are in places exceedingly congested. The choroid is somewhat compressed and its vessels are nearly empty of blood.

The examination did not reveal the exact seat of injury, nor, as was to be expected, was it possible to determine the exact seat or seats of the hæmorrhage.

Anatomical Diagnosis.—Injury to eye, hæmorrhage into all the cavities, recent as well as old, posterior synechia, commencing degeneration of the lens, complete detachment of the retina with proliferative œdema and degeneration of the same.

I saw Mr. C. three or four months after his eye was enucleated. The tissues of the orbit were shrunken so that his artificial eye had a sunken appearance. He was also obliged to remove it frequently in order to cleanse it and the cavity of a slimy mucous secretion which bathing with

astringents had failed to arrest. He still complained of the "floating shadow" before the left eye.

The prompt appearance of blood in the anterior chamber of the injured eye, upon inclining the head forward, was a phenomenon that I had never observed before, and I was at a loss to account for it. In the light of Dr. Prudden's examination, however, the mystery disappears. He found more or less old and recent hæmorrhages in all the cavities of the eye, and great congestion of the larger blood-vessels of the ciliary body. Probably the walls of the ciliary and other blood-vessels of the interior of the eye had become so weakened or brittle from long-continued inflammatory processes that the extra amount of blood forced into them by the dependent position of the head was sufficient to rupture them and allow the escape of their contents.

DIPHTHERIA SPREAD BY ADULTS.*

By A. JACOBI, M. D.,

CLINICAL PROFESSOR OF DISEASES OF CHILDREN IN THE COLLEGE OF PHYSICIANS AND SURGEONS, NEW YORK.

To elucidate some mooted points connected with the ætiology of diphtheria, I shall mention, among the cases of infectious diseases in the children's service of Bellevue Hospital, two of diphtheria. They could not remain in the ward any longer than was required for their removal to the fever hospital, but a sufficient time was given to study the cause of the disease. The cases were those of a girl of six, and one of three years of age. Both were inmates of the hospital in the winter of 1882-'83.

The first was admitted because of bronchitis. Foul odor from the mouth and glandular swelling round the neck directed the attention to the throat, which was filled with diphtheritic membranes. Four days previously the child was quite well; there were no other children in the room in which she had lived with her mother. The latter was a working woman, stout and robust. For weeks she had felt her throat sore, endured quietly some pain in swallowing, and went about her work. When her throat was inspected, weeks after, there was some loss of substance, some hyperæmia, but no longer any membrane. That there had been I did not doubt, nor do I to-day. It could not be ascertained that there were any children sick with the same affection in the house, and the inference must be that the little girl caught her severe diphtheria from her mother, who was not so sick with the same affection as to be prevented from working.

The second patient was brought in without a diagnosis. Within two days measles broke out. Her removal was ordered, but not completed before a small membrane made its appearance on one of the inflamed tonsils. In this case it was reported that a woman living on the same floor had a sore throat; of what description could not be ascertained.

In connection with these cases I venture to lay before you the following facts and considerations:

No permanent spontaneous generation is claimed, or has been proved, for cholera, scarlatina, or variola. Nobody looks for their primary cause in moist walls of houses, dry dust of streets, in the prevalence of previous house epidemics of typhoid fever, measles, or other eruptive diseases; in bad

* Part of a paper read before the Medical Society of the County of New York, September 22, 1884.

ventilation; in the odors of hospital wards; in putrefying kitchen refuse, or in the exhalation of sewers. But both medical men and laymen are found to be inexhaustible in accusing and condemning all those detrimental influences, not as being predisposing elements, not because of their injurious influence on health in general and on the condition of mucous membranes in particular, but as the main and frequently sole causes of diphtheria. In the minds of many physicians, diphtheria is intimately linked with sewerage; with them the trap of the water-closet and the plumbing of the cellar are the first objects of attention; the patients' and their families' fauces and nares coming in for a relatively smaller part of their care. If they would pay more attention to the direct sources of contagion, which is something understood and definite, than to the indefinite and unproved presumption of specific poisons in the outlets of the house, or the inlets from the sewers, their aetiology would be something more positive in a great many cases.

I do not mean to say that the house hygiene ought not to be looked after by the physician in every case of sickness, but the more I have seen the more it has occurred to me that we may live to reach the conviction that there is but one predisposing element, viz., a sore mucous membrane, and but one cause of an individual attack of diphtheria, viz., direct contagion.

Letting alone diphtheria of wounds and of cavities, the disease affects the oral and pharyngeal spaces, and the respiratory organs. It is the territory invaded on which the danger to the individual is dependent. The size of the membrane and its seat determine the character of the disease, *cæteris paribus*. While a tonsillar diphtheria is attended with scarcely any danger, a laryngeal diphtheria destroys a child by strangulation, and nasal diphtheria by sepsis. The character of the epithelium, whether pavement or cylindrical, the presence or absence, copiousness or scarcity of muciparous glands and lymph-ducts, decide the nature of a case. All this is well known. In my treatise on the subject* I have tried to settle these questions permanently.

It is just as well known, however, that the definition of the term of diphtheria, as it does not depend upon the size or seat of the membrane, is also not limited by the character of the symptoms. A high or a low temperature, muscular or pharyngeal pain, difficulty in deglutition or articulation, sepsis, glandular swelling, may be present or absent in a case of diphtheria as long as the characteristic membrane is met with. It is always diphtheria, dangerous to a certain degree to the individual by its direct effect; to a much larger extent, however, to uncounted others by its potential influence, its contagiousness. No matter how slight a case may be at a given time, it can extend to the nares or the larynx; or terminate in paralysis or death. Besides all that, it is communicable to another person; a mild case may as well generate many severe ones, as a severe one need not necessarily be the source of misfortune to others. For neither in diphtheria nor in other contagious diseases is contagiousness the unavoidable *sine qua non*. Neither variola, nor scarlatina, nor even measles, strikes every person within

striking distance. While a cannon-ball, however, may miss, a pistol-bullet may carry destruction.

Such a bullet is many a case of the so-called follicular amygdalitis (tonsillitis). There is such an affection as deserves the name. It implies a catarrhal or suppurative condition of a tonsillar crypt, or several of them. It may be obstinate and extend over years, giving rise to constant returns of the secretion, or to concretions. In the acute stage, even in the chronic, it will permit of the introduction of a probe into the duct to a depth of from one to two centimetres. The color of the secretion is often that of a membrane, not its nature, nor consistence, nor location (still it may become diphtheritic even inside the duct), and in that condition it is not diphtheria. But the large majority of cases which are commonly called follicular tonsillitis do not belong to this annoying but innocent class; most of them are diphtheria. Not everything not fatal need be called by a different name. What to-day looks like a point, or four or five points covering the outlets of ducts, may to-morrow be a confluent membrane. Just as well, you might withhold the name of variola from a case of small-pox so long as it was not confluent or did not destroy life. You have a family sick with affections of the throat and nose; a child is dying of laryngeal croup, another of nasal diphtheria, glandular swelling, and sepsis; others have severe pharyngeal affections; others but slight tonsillar tufts, which may or may not coalesce and extend into membrane. Is the first one "croup," are the others "diphtheria," is the last one "follicular amygdalitis"? Or the first case in a family was just such a one as was denominated tonsillar folliculitis by the family physician, and no preventive measures were taken to protect the rest of the little flock. From that moment it was that extermination began in that family. We have all seen it; we ought to heed it all.

Diphtheria in the adult is not so rare as it is reported to be. It is true, extreme cases are rare. Diphtheritic strangulation is not frequent; still, of about four hundred and fifty tracheotomies, I have performed two on adults—one on a man of fifty-five with an ossified trachea, and one on a lady of thirty-two. Diphtheritic sepsis is not very frequent either in the adult, the action of the lymph system being the more pronounced the younger the individual.

In this respect, sad experience had taught the boards of the French hospitals for sick children the frequency of diphtheria in the adult officers and employees of their institutions. A report, rendered by a special commission appointed for the purpose of inquiring into the possibility of preventing the contagion of diphtheria in those adults, is printed in the "Union méd." of December 3, 1881. It recommends protracted carbolic spray in the wards (!) and dead-houses, an increase in the number of nurses, of washing and bathing establishments, and an improvement in the housing, boarding, and pay of the medical officers.

Mild affections in adults, punctate deposits terminating in membranes on the tonsils, membranous streaks extending, vertically in most cases, over the posterior aspect of the tonsils, are frequent. It is not necessary that from their children alone father or mother who attended them should be infected. In many cases the source of the affection can

* "Treatise on Diphtheria," New York, William Wood & Co., 1880.

not be traced at all. The symptoms are often but few. A little muscular pain and difficult deglutition are, perhaps, all that is complained of. Women will quietly bear it; men will go about their business. An unmarried shopkeeper called on me several times in the course of a few weeks for a trifling complaint. Of his throat he did not speak at all; but I discovered a few patches, first on the left, store on the right, tonsil. My warning not to go to his store, lest he might get seriously ill or infect others, was not heeded. He attended to his business, coming in contact with a hundred women and children daily for weeks, until he was laid up for a week, to return to his dangerous and nefarious occupation as soon as he felt a little better. A school-mistress I have known to teach all day, for ten days, with diphtheritic patches in her throat. I could prevail upon her to retire a week from work only by threatening that I would communicate with the parents of some of her pupils about the danger the children were running. Two families of my acquaintance had the same experience, with their large houses full of children. They had never had diphtheria until they employed a seamstress, who came daily from her residence in another part of the city. Attacks of diphtheria followed each other in quick succession. The houses were examined from attic to cellar, the sewer was disturbed, the traps were changed. The health of the people did not change with the plumbing. At last the suspicion of contagion was roused. The seamstress came from a neighborhood and a family where diphtheria was endemic. From that time the woman was dispensed with, and no diphtheria has made its appearance in those families these six, and three, years. In the family of a physician there were two children—a boy, in good health otherwise; a girl, robust and vigorous. Both suffered from diphtheria repeatedly for many years, until the girl came near dying, and the boy died. What was the cause of the constant attacks dragging over years? The fact had been overlooked that it so happened that almost every time when the children were sick the old, trusted, and trustworthy nurse was also affected with diphtheria, sometimes seriously. What, however, was not known at that time, and was discovered later, indeed too late, was that the woman had concealed many an attack of throat disease, fever, difficult deglutition, out of a sense of duty; that she had often repeated those medicines which she had been supplied with before. In the early part of the summer of 1883 the boy died; the surviving girl was sent to the country; also the nurse, who had been sick with diphtheria for weeks. While in the country the child was not in so close and intimate company with her nurse as in the city and in winter. They returned to the city in September. In October the child was taken sick with diphtheria, the nurse having taken "throat medicine," unknown to anybody, for some time. Then the nurse was discharged; that was the end of the boy, and of diphtheria in that family.

If I add that in several families diphtheria broke out among the children after new servants had been engaged, and that these servants were found affected with throat disease, I think I only state the experience of many other practitioners.

The danger arising from the contagion spread by adults

affected with mild forms of diphtheria is increased by the fact that in them diphtheria is apt to assume a chronic character without losing its contagious nature.

In the third volume of his "*Traité clinique des maladies de l'enfance*," Paris, 1884), Cadet de Gassicourt quotes (p. 299) Salomon, who, more than eighty years ago, asserted that croup was a chronic affection, now and then; also Vieusseux, who, in 1812, alluded to four cases of prolonged croup. A protracted case of diphtheria is also mentioned by Empis ("*Arch. gén.*," 1850), and Hybre (1875) and Garcia Rijo (1878) made the same subject the theme of their Inaugural Theses.

In my "Treatise on Diphtheria" I have reported a case in which epiglottic and laryngeal diphtheria lasted a month, and terminated in recovery. Inspection proved the disappearance of old, and the formation of new, membranes during that time. Sanné has the observations of croup patients who recovered after a duration of 27, 32, and 60 days. Cadet de Gassicourt had to perform tracheotomy in cases of croup after they had lasted 18, 23, and 43 days. The first patient recovered; the two latter died. Barthéz emphasizes the long duration of membranes; they may last a month before being exfoliated and expelled. When they are exfoliated and expelled, they may form again in a few hours. A case in which the tracheal membrane below and above the bifurcation was formed anew in seven hours, I have reported in my treatise. Another case is as follows: At three o'clock p. m., on June 6, 1883, I observed in the throat of a girl of four years thick, pulpy membranes on the tonsils and pharynx; in the mouth absolutely nothing. They had been there a day and a half. At half past five I saw the child again. The cheeks, the tongue, the inner aspects of both lips, were covered with a dense, uniform pseudo-membrane.

Isambert has the case of a medical assistant who for fully nine months (both in Paris and abroad), and even after his general health had been considerably improved, expelled membranes daily from his nasal cavities. Cadet de Gassicourt publishes cases of pharyngeal and nasal diphtheria of 45 and 151 days', and one of laryngeal diphtheria of 65 days' duration. Most of the cases recorded ended in recovery.* While the disease lasted it was a source of danger to the person affected. This, however, is *not the greatest danger*; the contagion spreading from them is of greater importance than the risk run by the individual. Nor is the severity of such a case the most formidable danger. For a person dangerously ill is in bed, and a source of evil to those only immediately around him. Those, however, who feel well, or well enough to be about, are the scourge of the community at large, particularly as mild cases, being neglected, have a tendency to last long.

Isambert's assistant was traveling half a year to get rid of his nasal diphtheria. He recovered; but how many deaths did he spread, from railroad-car to railroad-car, from stage-coach to stage-coach, from hotel to hotel? To all these curses strewn out by the luckless wanderer after his own health, how many physicians have looked, in the sporadic cases occurring here and there, and in the epidemics

* "*Revue mens.*," 1884.

or epidemics generated by them, for the local cause of the supposed primary indigenous origin? Nobody suspected the traveler, who probably left days before, as nobody traces every outbreak of cholera to the unknown person who carried it upon his person or in his bowels.

These and other cases have induced me, while not overlooking the hygienic condition of the house, to look after the source of a diphtheritic attack in the persons of the friends and attendants. A family with children ought to insist upon the occasional inspection of the throats of their help; servants with chronic pharyngeal catarrh must not be hired. A seamstress, coming for an occasional day's work, ought to have her throat inspected; cooks and nurses must be looked after, the more carefully, the less such people are inclined to give way to their pains or ailments, or throw up their places. A sick nurse introduced into a family must be examined; she will go from one place to another, and carry pharyngeal and puerperal diphtheria. It is true that I know of no case, at least I can prove none, in which a physician carried the disease without having it himself. I know of many, though, who contracted it, although their visits in a patient's bedroom are but brief, and they are not very much exposed, except in cases of tracheotomy, etc. Many dozens of cases, however, are known to me in which the nurses were taken sick.

Thus, if there be any class of persons who are the constant transmitters of diphtheria, and require attention and caution, it is nurses and cooks—in fact, all domestic help; also sick-nurses, teachers, hair-dressers and barbers, shop-keepers, restaurant-keepers, and all those people who are in constant contact with all classes and ages. The physician enjoys a certain degree of both active and passive immunity, but it depends on the number and duration of his exposures whether he becomes more or less both endangered and dangerous.

What I have said may be very trite and trivial. But it so happens that I have seen a good deal of diphtheria these twenty-five years, and have tried to study and know it. I have, like others, studied the ætiology of the disease, and looked after the source of every individual case; have examined numberless traps and sewers; accused all sorts of causes, and have been impressed, like most others, with the idea that diphtheria might, after all, prove indigenous in houses and districts from local causes. The only thing I have not done in this direction is to discover a third or fourth variety of bacterium, and to proclaim it as the sole and infallible source of the evil. But the more I found that the sewerage, and cold, and other influences were but the suggestions of presumption and fear, and that I could not find a clew to a single case in external circumstances and influences, the more did I look for direct contagion in each case. It has taken me a long time to become convinced that it will be better, both theoretically and practically, to take nothing for granted, and to look for such facts as I can prove. As I said before, neither for variola nor scarlatina do we look in moist walls or sewers, but trace a case back to whosoever may have communicated it. It has dawned upon me too late that it is just so with diphtheria, and that preventive measures will be more effective

when we look for the cause of every case of diphtheria in the nares or throats of living persons. *There is as much diphtheria out of bed as in bed; nearly as much out of doors as indoors.* Many a mild case is walking the streets for weeks without caring or thinking that some of his victims have been wept over before he was quite well himself.

If I were to condense what I have had the honor to read, these would be the main points:

There is probably no spontaneous origin of diphtheria any more than there is a spontaneous origin of cholera or scarlatina.

Diphtheria is contagious. Severe forms may beget severe or mild forms. Mild cases may beget mild or severe cases.

What has been called follicular tonsillitis is *mostly* diphtheria. It is seldom dangerous to the patient, as the tonsils have but very little lymph communication with the rest of the body. But it is contagious.

This form is frequent in the adult, in whom it loses nothing, however, of its contagiousness.

Diphtheria in the adult proves dangerous to the community mostly because it does not restrain the patient from communicating the disease.

It is apt to last long: Firstly, because most cases occur on a surface covered with pavement epithelium (tonsils); secondly, because of the constant exposure and neglect on the part of the patient. Even without it, diphtheria may last weeks and more; with it, it is subject to sudden relapses. As long as it lasts it is contagious.

As diphtheria is but a mild affection in many adults, who disregard it and frequently do not care to mention its existence, pain in swallowing and moderate malaise being the only symptoms, the question of transmission by means of clothing, etc., on the part of third persons is capable of becoming more difficult to answer than it ever was. Many a case which has been believed to be thus carried is probably one of direct contagion from a patient to a second person, from this second to a third.

Clinical Reports.

ROOSEVELT HOSPITAL.

CLINICAL REMARKS BY HENRY B. SANDS, M. D.

Traumatic Stricture of the Urethra; External Urethrotomy.

GENTLEMEN: I will show you to-day a case of stricture of the urethra. The patient first came under my observation two or three days ago. He is a Scotchman, forty-three years old, and gives the following history: He suffered from gonorrhœa twenty-five years ago, the discharge lasting for several months. He was treated by injections, and recovered completely. In 1875, while at sea, he was carried by a wave across the deck and struck his perineum against a beam. He suffered afterward from severe pain at the seat of injury, had bleeding from the penis, and was confined to bed for three weeks. Micturition was painful, but he escaped retention of urine, and recovered without surgical treatment. Since that time he has had occasionally pain in the perineum, and hæmaturia. About a year

ago he had an attack of retention of urine which lasted for several hours, and then passed off without the use of instruments. During the attack he bled copiously from the penis. About the middle of December last he began to pass his urine nearly every hour of the day and night. The stream became small and twisted and flowed slowly, with pain in the perinaeum. In January his symptoms increased in severity, and since the end of January he has gradually lost flesh and strength. He also suffers from pain in the back and head, has photophobia and occasional nausea, is restless at night, and is obliged to pass his urine very frequently, micturition being painful. The urine is pale and of low specific gravity (1.007), it has an acid reaction, and contains ten per cent. of albumin and a moderate amount of pus. Dr. Hobbie, who has had the care of the patient, informed me that he had made a careful examination of the urine several times, and had failed to discover any microscopical evidence of renal disease. Since the patient entered the hospital the urine has been again examined microscopically, with a negative result; but the amount of albumin present in the urine and its low specific gravity suggest that there may be renal disease in addition to the disease of the urethra and bladder. It is with some misgiving, therefore, that I undertake the operation I am about to perform; for, as you are aware, when renal complications exist, operations on the urethra or bladder are attended with serious risk. Nevertheless, as the patient's life is rendered miserable by his infirmity, and evidently can not last long unless relief is afforded, the existence of renal disease is a matter which affects prognosis rather than treatment, for the operation is not inevitably fatal, and it offers the only possible means of cure.

The stricture is situated in the bulbous part of the urethra, and is quite close, no instrument having yet been made to pass it. I hope to be able now, however, to pass through the stricture a filiform elastic or whalebone bougie, and to use this as a guide in performing external urethrotomy. The stricture is traumatic in character, and would not be amenable to treatment by dilatation. Having now completed the operation, it may be profitable to you if I direct your attention to a few points connected with it, which ought to be kept in mind in case you should be called on to perform it. Notice, then, in the first place, that, after several trials, I succeeded in introducing through the stricture a filiform whalebone bougie, which served as a guide at a later stage of the operation. A metal guide would have been preferable, had I been able to pass it but even this thread-like piece of whalebone proved of the greatest advantage by enabling me to use the knife with precision in dividing the stricture. In performing the operation of perineal section without a guide, the surgeon is often puzzled while searching for the orifice of the stricture, and occasionally fails to discover it, in which case he is compelled to unite the proximal with the distal parts of the urethra by cutting through the intervening callous tissue, without following the exact course of the canal. But, if the latter can be traced and the urethra laid open at the seat of stricture, a good result is much more likely to be obtained; hence the advantage afforded by a guide, however small, in facilitating this delicate and important step of the operation.

In the second place, you may have observed that, when the urethra had been freely laid open by cutting on a grooved staff, the point of which was held immediately in front of the stricture, a loop of silk thread was passed through either edge of the urethral incision, so that the deeper parts could be drawn asunder, thereby bringing into view the orifice of the stricture and permitting the easy introduction of a slender grooved director, along which a narrow-bladed knife was made to divide the indurated tissues sufficiently to overcome all resistance. Unless

the deep parts are held aside by some method like that I have described, it is impossible to explore and divide the stricture with the requisite delicacy and precision.

Finally, you saw that the constricting tissues were completely divided, so as to allow the introduction of a full-sized sound into the bladder. When the knife is thus freely used, a recontraction is less apt to occur than when the stricture has been only partially divided. In certain cases, however, in which the induration is extensive, a radical cure can not be hoped for, and the occasional employment of a sound will be required to prevent a recurrence of the disease.

[The patient continued to lose strength after the operation, and died of exhaustion on the tenth day. Post-mortem examination showed dilatation of both ureters, and dilatation and degeneration of the right kidney.]

Book Notices.

Clinical Chemistry. An Account of the Analysis of the Blood, Urine, Morbid Products, etc., with an Explanation of some of the Chemical Changes that occur in the Body in Disease. By CHARLES HENRY RALFE, M. A., M. D., F. R. C. P. L., Assistant Physician at the London Hospital, etc. Illustrated with 16 Engravings. Philadelphia: Henry C. Lea's Son & Co. Pp. ix-308.

This little book aims to give in brief compass the chemical composition and reactions of the animal tissues and fluids both in the normal and in the morbid state. But, as its title indicates, it regards rather the clinical than the physiological aspect of its subject; and, accordingly, it differs from a book like Gamgee's "Physiological Chemistry" in containing only so much chemical matter as will be of assistance to the physician in the diagnosis of disease. In accordance with this plan, the general introduction, in which are enumerated the chemical principles entering into the animal constitution, is condensed to the utmost degree. Much more elaborate is the account which follows of the analysis and tests of the different fluids of the body—blood, chyle, lymph, and milk. To the examination of the urine seventy pages, or nearly a quarter of the work, are devoted; and these contain nearly everything that the physician requires for clinical purposes. In this connection Ralfe gives some (although not all) of the more recent tests for albumin and glucose in the urine—tests which have hitherto been described only in medical periodicals or society transactions. Next in order to the urine is a description of the chemistry of the saliva and other digestive juices, and of bile, vomit, flatus, and feces; and, in connection with derangements of the liver, the author considers not only jaundice, but also diabetes and lithæmia (uricæmia). A sort of appendix to this chapter describes the processes for the examination of the stomach in cases of suspected poisoning, and for the determination of the total amount of nitrogen taken in and discharged by the organism. A chapter on the chemistry of morbid products closes the book. In this the author treats successively of calculi of various sorts; of the products of tissue degeneration; of morbid exudations, such as pus, dropsical fluids, etc.; of chemical changes in osseous lesions; and of the chemical basis of scurvy, rheumatism, and gout.

Such is the scheme which has been followed out with very fair success. The author has succeeded in compressing into about three hundred small-sized pages much that is valuable and important for a physician to know; and those who desire

a work of this scope, the perusal of which will take but little time, can hardly go wrong in purchasing his book.

There are several good illustrations, and the binding and typography of the book are tasteful.

Fat and Blood: an Essay on the Treatment of Certain Forms of Neurasthenia and Hysteria. By S. WEIR MITCHELL, M.D., etc. Third edition, revised, with additions. Philadelphia: J. B. Lippincott & Co., 1884. Pp. 164. [Price, \$1.50.]

As is well known to the majority of the profession, Dr. Mitchell is the advocate of a system of treatment the essential features of which are seclusion, rest, electricity, massage, and a dietary that may be modified to suit the pathological exigencies liable to occur in individual cases.

It is not, however, to be supposed that Dr. Mitchell imagines himself entitled to priority in the use of any single one of these factors in the treatment of certain varieties of nutritive derangement. But, while these various expedients had often been recommended separately, they had never been proposed collectively. This fact has, we conceive, been lost sight of by those who have sought to disparage the views of the author, on the score of lack of originality.

If succinctness, the practical adaptation of broad physiological laws, and lucidity of diction are praiseworthy, to this little book must be awarded the highest excellence.

The author has carefully rewritten much of it, and in its present shape it constitutes a most attractive little volume.

The Causation of Sleep. By JAMES CAPPIE, M.D. Second edition, rewritten. Edinburgh: James Thin, 1882. Pp. xv-207.

We have carefully read every page of this admirable little treatise, and we must say not only that the philosophy of the subject is well handled, but that the style also is worthy of the highest commendation. In a word, the diction is of that rare variety which conveys ideas of a weighty and even intricate character without fatiguing the mind of the reader. This in itself is a great merit, constituting as it does a quality for which every book-buyer can not but be thankful. Dr. Cappie's views of sleep are not of an extreme or one-sided character. Thus, he does not perceive in the retrocession of the encephalic blood stream during unconsciousness the sole cause of sleep, but only one of the factors of this intricate phenomenon. According to him, the anæmia of the brain during sleep is to be regarded as the consequence of the state of exhaustion engendered in the cells by previous functional activity. While in this state of exhaustion the cells have a diminished affinity for the oxygen of arterial blood.

It is impossible to do justice to the entire argument of the question in the limited space at our disposal, and we must refer the reader to the book itself, wherein will be found much both to instruct and to entertain. Dr. Cappie's little book is certainly a welcome addition to the literature of cerebral physiology.

BOOKS AND PAMPHLETS RECEIVED.

Atlas of Female Pelvic Anatomy. By D. BERRY HART, M.D., F.R.C.P.E., Lecturer on Midwifery, School of Medicine, Edinburgh, etc. With a Preface by Alexander A. J. C. Skene, M.D., etc., Brooklyn. New York: D. Appleton & Co., 1884. Pp. 89-vi-iv, and Colored Plates. [Price, \$15.]

A System of Human Anatomy, including its Medical and Surgical Relations. By HARRISON ALLEN, M.D., Professor of Physiology in the University of Pennsylvania, etc. Illustrated with Three Hundred and Eighty Figures on One Hundred and

Nine Plates, etc. Section vi.—Organs of Sense, of Digestion, and Genito-urinary Organs. Philadelphia: Henry C. Lea's Son & Co., 1883. Pp. iv-585 to 811, inclusive. [Portfolio Cover.]

Henke's Atlas of Surgical Anatomy. A Series of Plates illustrating the Application of Anatomy to Medicine and Surgery. Translated and Edited by W. A. Rothacker, M.D., Pathologist to the Cincinnati Hospital, etc. Cincinnati: A. E. Wilde & Co. Pp. xx, and Plates.

A Text-Book of Practical Medicine, designed for the Use of Students and Practitioners of Medicine. By Alfred L. Loomis, M.D., LL.D., Professor of Pathology and Practical Medicine in the Medical Department of the University of the City of New York, etc. With Two Hundred and Eleven Illustrations. New York: William Wood & Co., 1884. Pp. xv-1102.

A Practical Treatise on Disease in Children. By Eustace Smith, M.D., F.R.C.P., Physician to His Majesty the King of the Belgians, etc. New York: William Wood & Co., 1884. Pp. xxiv-844.

The Ear: Its Anatomy, Physiology, and Diseases. A Practical Treatise for the use of Medical Students and Practitioners. By Charles H. Burnett, A.M., M.D., Professor of Otolaryngology in the Philadelphia Polyclinic, etc. With One Hundred and Seven Illustrations. Second Edition, Revised and Rewritten. Philadelphia: Henry C. Lea's Son & Co., 1884. Pp. xxiii-20 to 585, inclusive.

Osteotomy and Osteoclasia for Deformities of the Lower Extremities. By Charles T. Poore, M.D., Surgeon to St. Mary's Free Hospital for Children, etc. New York: D. Appleton & Co., 1884. Pp. x-187. [Price, \$2.50.]

A Text-Book of Pathological Anatomy and Pathogenesis. By Ernst Ziegler, Professor of Pathological Anatomy in the University of Tübingen. Translated and Edited for English Students by Donald MacAlister, M.A., M.B., M.R.C.P., Fellow and Medical Lecturer of St. John's College, Cambridge. Part II.—Special Pathological Anatomy, Sections i-viii. New York: William Wood & Co., 1884. Pp. x-365. [Wood's Library of Standard Medical Authors.]

A Manual of Diseases of the Throat and Nose, including the Pharynx, Larynx, Trachea, Esophagus, Nose, and Naso-pharynx. By Morell Mackenzie, M.D. Lond., Consulting Physician to the Hospital for Diseases of the Throat, etc. Vol. ii.—Diseases of the Esophagus, Nose, and Naso-pharynx. New York: William Wood & Co., 1884. Pp. vi-400. [Wood's Library of Standard Medical Authors.]

Recherches cliniques et thérapeutiques sur l'épilepsie, l'hystérie et l'idiotie. Compte rendu du service des épileptiques et des enfants idiots et arriérés de Bicêtre pendant l'année 1883. Par Bourneville, médecin de Bicêtre, Bonnaire, Boutier, Leflaive, internes du service, P. Bricon et Séglas, docteurs en médecine. Volume iv avec 8 figures et deux planches. Paris: Bureaux du "Progrès médical," 1884. Pp. xxxviii-151.

Auscultation, Percussion, and Urinalysis. An Epitome of the Physical Signs of the Heart, Lung, Liver, Kidney, and Spleen in Health and Disease. Edited by C. Henri Leonard, A.M., M.D., Professor of the Medical and Surgical Diseases of Women, and Clinical Gynecology, Michigan College of Medicine, Detroit. Fully Illustrated. Detroit: The Illustrated Medical Journal Co. Pp. 166.

Visions of Fancy. A Poetical Work. By N. M. Baskett, M.D. St. Louis, 1884. Pp. 109.

A Manual of Obstetrics. By Edward L. Partridge, M.D., Professor of Obstetrics, New York Post-Graduate Medical School, etc. With Sixty Illustrations. New York: William Wood & Co., 1884. Pp. x-295.

Proceedings and Addresses at a Sanitary Convention held at Ionia, Michigan, December 13 and 14, 1883.

Proceedings, Addresses, and Discussions of the Third Semi-annual Meeting of the Kentucky State Sanitary Council, held at Bardstown, Ky., March 26 and 27, 1884, under the auspices of the State Board of Health.

London Water Supply. Report, etc., No. XLII.

McGill University. Annual Calendar, Faculty of Medicine. 52d Session, 1884-'85.

Annual Catalogue of the Louisville Medical College, Louisville, Ky. Session of 1884-'85.

Announcement of the Fourth Annual Session of the Medical Department of the University of Denver, Denver, Colorado. College Year, 1884-'85.

The Treatment of Diabetes Mellitus. By Austin Flint, Jr., M. D., Professor of Physiology in the Bellevue Hospital Medical College. [Reprint from the "Journal of the American Medical Association."]

The Medical Graduate and his Needs. By George C. Weber, M. D. Detroit: George S. Davis, 1884. Pp. 100.

Reasons for believing in the Contagiousness of Phthisis? By W. H. Webb, M. D., Philadelphia. [Reprint from the "Medical Bulletin."]

Twentieth Report of the Trustees of the City Hospital, Boston, . . . 1883-'84.

Twenty-fifth Annual Announcement and Catalogue of the Hahnemann Medical College and Hospital of Chicago.

On a New Method of Recording the Motions of the Soft Palate. By Harrison Allen, M. D., Professor of Physiology in the University of Pennsylvania. [Reprint from the "Transactions of the College of Physicians of Philadelphia."]

Medical Communications of the Massachusetts Medical Society, Vol. XIII—No. iii, 1884.

Excision of the Rectum for Cancer; Operation. By Walter Coles, M. D., St. Louis. [Reprint from the "St. Louis Courier of Medicine."]

Third Annual Announcement of the Hospital Medical College of Evansville, Ind. Session of 1884-'85.

Announcement of the Baltimore Medical College, Session of 1884-'85.

Third Annual Announcement and Catalogue of the Woman's Medical College, of Baltimore, for the Session of 1884-'85.

Eleventh Annual Report of the Secretary of the State Board of Health of the State of Michigan, for the Fiscal Year ending September 30, 1883.

Names and Addresses of Health Officers in Michigan for the Year 1884-'85. Arranged from Returns by Local Boards of Health to the State Board of Health.

Protection and Free Trade to-day, at Home and Abroad, in Field and Workshop. By Robert P. Porter. Boston: James R. Osgood & Co., 1884. [Price, 10c.]

Correspondence.

LETTER FROM CHRISTIANIA.

The Dinner given to the International Medical Congress by the Municipality of Copenhagen.—The King's Reception.—The Close of the Congress.

CHRISTIANIA, August 31, 1884.

The grand dinner given on Thursday evening by the municipality of Copenhagen to the members of the Congress was by far the most extraordinary and unique feature of the whole meeting, and, in brilliancy, magnitude, and originality, far surpassed any entertainment of the kind on record. To describe it with

any justice would require the pen of a Goethe. The building in which it was held was erected especially for the occasion. It was made of wood and glass, and located on the edge of a quay which overlooked a beautiful view of the river and harbor, and in one of the most attractive parts of the city. Each card of invitation bore the name of the recipient, the number of the table at which he was to sit, and a plan of the general arrangement of the tables.

Promptly at the time appointed long lines of carriages filled the principal avenues of approach. The "Dannebrog" was seen suspended from every flag-pole in the city, while the vessels in the harbor were, with one accord, covered with flying clouds of color. On entering the main end of the banquet hall, the guest first found himself in a large lobby, upon each side of which were long, double rows of books—each row numbered to correspond with a table, and each book also numbered. By this means a place was secured for the hat, etc., of each guest, and without the slightest delay or confusion. Passing through the lobby, the guest suddenly found himself in a magnificent, spacious, and airy hall, the ceiling and sides of which were tapestried with a dark cream-colored stuff, relieved by trimmings of buff. Upon a double row of slender columns, which ran the length of the room, were huge clusters of "Dannebrog," beautifully grouped and arranged. The Danish flag, by the way, consists, as every one knows, of a white cross upon a red field, and for purposes of decoration is exceedingly effective. Upward of forty tables, each capable of seating about thirty-five, were arranged in rows at each side of the room, excepting in the middle, where, at one side, was a large raised platform, upon which, at five tables, were stationed the hosts of the occasion and the more distinguished guests.

Behind the principal table of all, at which the Regent of the University presided, there appeared upon the wall a huge coat-of-arms of the city, done in flowers, and more than twenty feet square. Around it were grouped the flags of all the nations represented at the Congress. On the opposite side of the room was a raised desk, from which responses to toasts were delivered. Most remarkable of all was the flood of light which filled the place. On searching for its source, one saw, besides the large skylights in the roof, that one half of one side, and the whole of the other, that toward the water, were made of glass!

Fortunately, we, with our *fidus Achates*, were stationed at the second table from the center, and, having arrived early, were allowed to select the end seats.

Again, as upon the occasion of the opening of the Congress, the guests appeared in full regalia, and, as we stood watching the company assemble, the same lavish display of richly jeweled orders was observed. There were some, notably Esmarch and Volkmann, famous men indeed, whose bosoms fairly blazed, covered as they were with glittering ornaments. There were others again, no less distinguished, with whom, as with Pasteur, one decoration was enough. While, conspicuous among all for the absence of all external aristocratic insignia, stood one, well known to every reader of this letter, whose fine countenance, manly dignity, and genial grace were in themselves an all-sufficient stamp of greatness.

Promptly at the appointed time the company was seated, and, after the military band had played the stirring Danish national hymn, the dinner was formally opened by a short speech from the Regent. Then the large doors at the farther end of the hall were thrown back, and a procession of one hundred and fifty waiters, each bearing a huge porcelain tureen of steaming soup, marched solemnly down the hall, the head of the column going the whole length of the room and finally halting at the last tables. This manoeuvre, as well as the soup, was, each in its own way, excellent. Course after course was thus served,

each of its kind appetizing, delicious, and in some instances characteristic. The wines, as at all the Danish entertainments, were varied in kind, in quantity abundant, and of the very best quality. Delightful music was furnished by the band, and also by a chorus of male voices, foremost of which was a superb baritone, the singing by which of certain beautiful Danish Folks-Lieder to an accompaniment by the other voices was worthy of the highest admiration.

During the dinner the object of the huge window toward the river-side was made evident, for, one after another, a succession of beautiful steamers, decorated to the utmost with flags, and with their decks covered with people, sailed slowly by, saluting us as they passed by dipping their colors and by a great waving of handkerchiefs from those on board.

A few short speeches were made, Pasteur, Paget, Virchow, Crundeli, and Panum, together with the celebrated antiquarian, Professor Warsaa, being the orators. Thus two hours quickly passed, and at a few minutes after seven, in the early twilight of a beautiful evening, began the most wonderful part of the whole performance. The whole company was ushered out of the dining pavilion and into the open air, where, moored one after another to the quay, were five large steamers. Upon these all quickly embarked. Then began such an ovation as no man present had ever seen before—a sight which might have recalled to Copenhagen two other such occasions—the first, when it welcomed the victorious Christian IV, most famous of all the Danish kings; and, again, years later, when the city rose as one man to greet its greatest genius, Thorwaldsen, convoyed from Rome in triumph, with all his works of art about him, in a royal man-of-war.

Our course was up the same water-way for about a mile and a quarter. Everywhere, from the beginning to the end of the sail, everywhere on both sides of the river, quays, windows, roofs, wharves, bridges, and shipping swarmed with crowds of people, who cheered, shouted, and hurraed to the utmost, and who made the places in which they stood white with the waving of a sea of handkerchiefs. Everywhere was seen the Danish flag. Every vessel, from the largest ship to the smallest yacht and fishing-boat, was in holiday attire. All along the shore fireworks were displayed. The amateur boating clubs turned out in full force, and the quiet waters were filled with wherries, gigs, and barges, many of the latter six- and eight-oared, all manned by capital oarsmen, who, in their pretty boating costumes, rowed alongside our steamers, saluting each one with their oars as they passed, the coxswain of each burning beautiful colored lights as long as they remained in sight. Slowly we made our way, until the excitement grew intense, and the oldest and most distinguished cheered and saluted with the rest. Thus, at last, the Tivoli, or summer concert-garden, was reached. There is no such Tivoli as Copenhagen's in all Scandinavia, nor, probably, in all Europe. On this occasion it outdid itself. Its beautiful pavilions glowed with colored lights until they looked like splendid set pieces of fireworks. Here and there tall poplar trees were hung with Chinese lanterns to their very tops. The little lake was surrounded with semicircles of colored lights, and pyramids of the same floated like radiant swans upon its bosom. Even the very flower-beds and fern-banks were illuminated, by methods as ingenious as they were beautiful. The display of fireworks was fine. The bands played, the pantomime and the theatre were at their best.

The "Hanlons" flew on their *trapèze*, the "Rutsch-Eahn" roared, the circular boats tore around their winding way, the revolving balloons rose and fell, people great and small swarmed everywhere, and Tivoli was ablaze.

A reception was given to the members of the Congress on Friday evening, August 15th, by his Majesty Christian IX, King

of Denmark, at the Royal Palace of Mariaborg. The attendance was large, all the leading members of the Congress being present. The company was received by the whole of the Royal family then in Denmark, namely: the King and Queen, their son, the King of Greece, with his Queen, the Crown Prince and Princess, and the King of Denmark's youngest son. The grand apartments of State were thrown open for the occasion. The Royal party were exceedingly affable and easy in their reception of the guests presented to them, and conversed steadily and intelligently with all who lingered to chat with them. The impression which they made was particularly pleasant in every respect. The jewels of the Queen of Greece and of the Crown Princess are worthy of mention, the former consisting of the usual tiara, necklace, corsage, etc., the necklace being a band composed of five strings of beautiful pearls, while the other ornaments were made up of emeralds, surrounded by large diamonds.

The emeralds set in the corsage were of extraordinary size and purity. The jewels of the Crown Princess are diamonds, and said to be of great value.

At ten o'clock supper was announced, and the company was ushered into another suite of apartments, each one of which was filled with tables covered with every luxury. Conspicuous upon the tables were the royal pheasants, each decorated with his own plumage and surrounded on all sides by game in infinite variety, and by all the other toothsome and attractive dishes which Scandinavia could furnish and French skill perfect. Wandering from room to room, one at last found himself in the grand banquet-hall, a superb room with lofty roof and of ample size, decorated in white and gold, and flanked on each side by a row of beautiful columns. In a gallery at one end was stationed the Royal Military Band, while below, at the same end of the room, the Royal Family continued to receive. Everywhere were famous men, brilliant lights, splendid paintings, princely saloons, the hum of many voices, and the strains of the music. Everywhere, too, were eating and drinking, merry-making, and feasting. Of one thing there can be no question: There is, somewhere in Denmark, an inexhaustible fountain, not of water, but of champagne. It flowed steadily throughout the whole of the Congress, and reached high-water mark on the occasion of this reception.

The Congress was brought to a close on Saturday evening by a ball and *fête*, given to the members and their lady friends at the National, a beautiful theatre opposite the Tivoli. Although a number had already left the city, the attendance was large and the occasion very enjoyable. A fine supper was served, the music was capital, and dancing was continued until a late hour. Everybody waltzed, young and old, including Professor Esmarch, and thus the Eighth International Medical Congress was brought to a happy and most successful termination.

In reviewing the events of this memorable week, there are some things which should not pass unnoticed. Although by no means a large and wealthy state, such were the liberality, thoughtfulness, and ingenuity of our entertainers, that they made their Congress by far the most enjoyable one on record. Again, although, for political reasons, even such an assemblage could not be brought together without great danger of serious controversies, such were the dignity, fairness, and good temper of those in charge, that all passed off smoothly; the spirit of the meeting was, on the whole, a united one; and, finally, every one seemed to depart satisfied and happy. All honor, then, to our brave, courteous, and generous friends, the Danes; and when they come to visit us in Washington, three years from now, let us show them that we have not forgotten their genial kindness and their splendid hospitality.

D. B. D.

THE
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A Weekly Review of Medicine.

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FRANK P. FORSTER, M. D.

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THE HOSPITAL SUNDAY AND HOSPITAL SATURDAY MOVEMENT.

Few things are better known to the majority of medical men than that the just and successful management of hospital relief for the poor is beset with a number of problems. Essentially, these problems are the same everywhere, turning largely on the difficulty of procuring funds for the adequate support of hospitals without depending supinely on the generous impulses of a few men, whereby the greater number of those on whom the burden ought to fall escape their obligations altogether, or without falling into the still more deplorable error of making the institutions a direct tax upon the State.

A notable contribution to the solution of these difficulties, however we may view the details he proposes, has lately been made by Mr. Henry C. Burdett, of London, whose interest in matters connected with the maintenance and management of hospitals, as well as the extent of his information concerning them, is not unknown on this side of the Atlantic. We refer to a paper recently read by him, apparently at a meeting of the councils of the Hospital Sunday and the Hospital Saturday Funds, of London, which, together with the discussion to which it gave rise, has reached us in the form of a pamphlet. At the outset, Mr. Burdett deals with the historical aspect of the movement, and he brings forward strong evidence in support of the view that Canon Miller is to be credited with having practically initiated it. With that matter, however, we have no present concern; but it is gratifying to note that the editor of the "Lancet" is conceded to have been chiefly instrumental in extending the operation of the system to London.

The writer of the paper makes some radical criticisms of the methods employed in behalf of the Hospital Saturday Fund, chiefly the underhanded way in which the collections are sometimes made, the appearance of dickering with the hospital authorities, and especially the cost of carrying on the work. Concerning the first of these points, he quotes as follows from a letter written by a member of the council: "The Saturday Fund goes to the workshops of London on the mere chance of finding some one who may be able to steal, as it were, occasionally a few minutes of the employer's time in coaxing his shop-mates to give him a contribution. It is always difficult to do this in a workshop when men's minds are fully occupied with their respective callings, and must hardly ever be done openly before the foremen or employers."

It appears that in London the hospitals profit by the Saturday Fund not altogether in proportion to the amount of charitable work they do, but to some extent, we infer, according to their willingness to give what Mr. Burdett looks upon as a *quid*

pro quo in the shape of "tickets." This, he thinks, must detract from the true spirit of charity in which the workingmen ought to make their contributions. In the debate, however, it was replied not only that this was not a legitimate inference, but that the policy in question was actually beneficial, inasmuch as "tickets" were thus put within the reach of the workingmen without their being subjected to the hardship of canvassing for letters among those qualified to grant them. It was urged, moreover, that there was no reason why the contributors to such a fund should not be entitled to "tickets" quite as much as individual subscribers to the funds of the hospitals. It seems to us that the plain inference to be drawn from this diversity of views is, that the "ticket" system is a thoroughly bad one, by whomsoever it may be administered. So far as we know, there is nothing of the sort in use in this country, and it is quite certain that the need of it has never been felt.

In regard to the expense of collecting the Saturday Fund, Mr. Burdett believes that it amounts to about one fifth of the sum collected—a proportion far in excess of that for the Sunday Fund, and even of that for the Saturday Fund in other English towns. But in this respect, as in all others, the members of the council present when Mr. Burdett read his paper professed their entire willingness to profit by any suggestions he might be able to make. The remedy he proposed consisted in the consolidation of the two councils—a measure that does not seem to have found favor with the meeting; and it is not clear that such a course would be attended with the great saving which he appeared to expect, while there is reason to suppose that a single council would prove awkward in operating two sets of machinery so diverse. It seems probable that the net gain from the Saturday Fund, although smaller, both absolutely and in proportion to the outlay, is really so much added to what the total would otherwise amount to.

THE TEACHING OF DERMATOLOGY IN FRANCE.

Of all the qualities, whether in an individual or in a nation, calculated to lead on to greatness or to the "recovery of lost perfection," the disposition to self-criticism is unquestionably one of the foremost. The French people, with all their undoubted greatness, have not generally shown this disposition to any great extent; indeed, they have usually seemed to be of the frame of mind of a certain assemblage of worthies who passed two resolutions: 1. That the saints should inherit the earth; 2. That they were the saints. It is doubly gratifying, therefore, to meet with such a token of amendment on the part of the French as is shown in a recent editorial article in the "Progrès médical."

The article treats more particularly of the decadence of French dermatology, especially as compared with that of the Vienna school, but the admission is made, quite without reserve, that the teaching of pædiatrics in Paris is decidedly in a bad way, and by implication something approaching the same indictment is brought against the way in which the other branches of medicine are handled.

The Hôpital Saint Louis, the writer recognizes, is still unri-

vaied in the magnitude of its special service, but that very fact, accompanied as it is by serious defects in turning the clinical facilities to account, leads him to liken it to a *congestion*; and he writes regretfully of the disorder and the dizzy rapidity that characterize the teaching. There is not room for the patients that ought to be received, there is not room for the museum, and the teaching force is wholly inadequate. The Bietts, the Cazenaves, the Devergies, and the Bazins are no more. M. Fournier is a man of great ability, but, primarily and above all else, he is a syphilidologist, and apparently a dermatologist only by force of circumstances. Give him free play (says the writer, in effect) in his chosen field, and let some one else teach dermatology. There is, undoubtedly, a good deal of force in this last suggestion, but it does not seem to us to strike at the root of the matter, for we believe Fournier to be quite equal to the occasion. But there is another feature which, if it is not remedied, will surely defeat any aspirations the French may have for enduring supremacy in dermatology; and that is the fact, as the writer in question shows, that practically there is no career in dermatology open to a young man in Paris. He may serve as an *interne*, but for a fixed and brief period only; after that he may become a hospital physician, but the chances are against his being assigned to the Saint Louis, except by the caprice of the system of rotation, and that only after the lapse of ten or fifteen years spent in the general medical service, during which time he has become disheartened, and has in great degree lost his familiarity with skin diseases, so that he finds himself obliged to learn dermatology *de novo*. This dreary outlook is sharply contrasted with the steady gradation that is readily within the reach of a promising man in Vienna.

According to our author, there is no single remedy for this state of things, but a number of reforms must be accomplished. The Saint Louis should be enlarged, dermatology should be made a branch by itself in the faculty, and, above all, the way should be made easy for young men who wish to devote themselves to the study and teaching of diseases of the skin. The latter end is to be attained by really specializing the hospital making appointments on its staff rest upon the test of a special *concours*, rather than subject to the accident of rotation. We have no doubt that our contemporary hits the nail on the head and we are persuaded that its article, if properly taken to heart by the profession and the hospital authorities in France, will prove to have pointed to the regeneration of French medicine.

MINOR PARAGRAPHS.

THE "WORLD" ON BEARDED WOMEN.

In its issue for September 22d, the "World" gave a full column or more to its medical department—all on bearded women and the electrolytic method of relieving them of their superfluous hairs. According to the "World," this process seems to have had almost as many discoverers as the telephone. Among these discoverers Dr. George H. Fox, Clinical Professor of Diseases of the Skin in the College of Physicians and Surgeons, figures prominently, and so much of the "World's" article as is not devoted to a sensational account of the various bearded women who have from time to time been on exhibition

is given up to a scarcely less sensational interview with that gentleman. Can it be because the "World" has a grudge against the College of Physicians and Surgeons that it thus persistently holds the members of its faculty up to virtual ridicule?

THE BOSTON CITY HOSPITAL REPORTS.

We lately commended the work done by the Boston City Hospital, and expressed our regret that there had been no recent issue of a volume of its excellent "Reports." We are glad to be able to say now, on the authority of a member of the medical staff, Dr. Robert T. Edes, that it is scarcely more than two years since the third volume appeared. It is edited by Dr. David W. Cheever, Dr. Oliver F. Wadsworth, and Dr. A. L. Mason, and may by had of Messrs. A. Williams & Co., Boston. It is a pleasure to learn that the series is continued.

NEWS ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending September 23, 1884:

DISEASES.	Week ending Sept. 16.		Week ending Sept. 2	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid Fever.....	32	17	44	11
Scarlet Fever.....	27	8	17	1
Cerebro-spinal meningitis.....	4	4	5	4
Measles.....	22	11	16	5
Diphtheria.....	29	17	33	17

The Cholera seems practically to have ceased its ravages in France, but the accounts are to the effect that it is still raging in Italy, and that there is an uncomfortable prevalence in certain Spanish towns.

Yellow Fever in New York.—Another man infected with yellow fever has found his way into New York, having eluded the quarantine, but the sanitary officials do not entertain the fear that the disease will be spread.

Suicide of a Medical Student.—We regret to have to announce that a member of the class at the Medical Department of the University of the City of New York committed suicide in a cab last week, the only motive, apparently, being a condition of depression occasioned by the hopeless illness of his mother and sister.

The Medical Society of the County of New York, at the meeting held on Monday, the 22d inst., had before it the applications of two gentlemen who had been homoeopathsists, and who had been graduated from homoeopathic schools. No final action was taken on the applications, but the names were referred back to the Comitia Minora.

Nominations for Officers of the Medical Society of the County of New York for the ensuing year were made at the meeting held on Monday, the 22d inst., as follows: For president, Dr. Daniel Lewis, Dr. Henry B. Sands, Dr. D. B. St. John Roosa, and Dr. Andrew H. Smith; for vice-president, Dr. Frank P. Foster and Dr. Laurence Johnson; for secretary, Dr. Wesley M. Carpenter; for assistant secretary, Dr. Charles H. Avery; for treasurer, Dr. Orlando B. Douglas; for censors, Dr. J. W. Howe, Dr. F. M. Weld, Dr. H. E. Crampton, Dr. J. H. Ripley, Dr. W. R. Gillette, Dr. F. R. S. Drake, Dr. A. S. Hunter, and Dr. H. T. Peirce.

A New English Medical Journal, to be called the "Medical Chronicle," is announced to make its appearance next month.

It will be published monthly at Manchester, and will be edited by James Niven, M. B., and W. J. Sinclair, M. D., in conjunction with a publishing committee, consisting of Dr. J. Thorburn, Dr. Charles J. Cullingworth, Dr. Julius Dreschfeld, Dr. James Hardie, Mr. Thomas Jones, Dr. D. J. Leech, Dr. David Little, Dr. D. Lloyd Roberts, and Dr. James Ross. It will be seen that this list includes the names of a number of gentlemen who are well known in America, and it must be said that the new journal will start under unusually favorable auspices. It is to be regretted, we think, that the title chosen for it is identical with that of a journal now published in Baltimore.

Mr. Lawson Tait, of Birmingham, England, by invitation, gave a clinic at Bellevue Hospital on Saturday morning, the 20th inst., in the course of which he removed the ovaries and the oviducts in two cases. The remarks which he made on the conditions that call for this operation were of great interest, and, as he kindly offered to write them out for this journal, we expect to be able to lay them before our readers in full in a future issue. The impression made by Mr. Tait on that occasion, as on every other on which he has appeared before the American profession, was to the effect that he was not only a most accomplished surgeon, but also a man of attractive personal character.

Dr. W. S. Playfair, of London, was to meet a large representation of the medical profession of New York and the neighboring cities last evening, at a reception to be given in his honor by Dr. Thomas Addis Emmet.

The American Gynecological Society will hold its ninth annual meeting at the Palmer House, in Chicago, on Tuesday, Wednesday, and Thursday, September 30th and October 1st and 2d. The programme includes the following papers: *Tuesday*.—Moot Points in regard to Inversion of the Uterus, by Dr. John C. Reeve, of Dayton, O.; Foreign Bodies in the Abdomen after Laparotomy, by Dr. Henry P. C. Wilson, of Baltimore; Abdominal Section; its Value and Range of Application, by Dr. C. D. Palmer, of Cincinnati; The Hygiene of Pregnancy, by Dr. Samuel C. Busey, of Washington; Rapid Dilatation of the Cervical Canal, by Dr. William Goodell, of Philadelphia; Cervical Fibroids as a Cause of Dystocia, and their Removal by Vaginal Enucleation, by Dr. Paul F. Mundé, of New York. *Wednesday*.—The President's Address; The Present Aspect of the Puerperal Diseases, by Dr. Albert H. Smith, of Philadelphia; A further Report upon Extra-uterine Pregnancy, embodying Six Cases, by Dr. T. Gaillard Thomas, of New York; A Case of Tubal Pregnancy, with Rupture of the Sac, by Dr. R. B. Maury, of Memphis; The Limits of Vaginal Hysterectomy for Cancer, by Dr. Paul F. Mundé, of New York; Some Remarks on the Occipito-posterior Position in Vertex Labors, with an Analysis of Thirty-five Cases, by Dr. Edward Warren Sawyer, of Chicago; A Rare and Fatal Form of Sepsis without Symptoms, by Dr. George J. Engelmann, of St. Louis. *Thursday*.—The Physiognomy of the Vulva as a Sequence of Anal Disease, and the Cause or Sustaining Cause of Uterine Disease, by Dr. Isaac E. Taylor, of New York; The Early History of the Treatment of Vesico-vaginal Fistule in the United States, and the Statistics of the Several Modes of Operating, by Dr. Nathan Bozeman, of New York; Periodical Symptoms in Uterine Disease, by Dr. George J. Engelmann, of St. Louis; Contributions to the Topographical and Sectional Anatomy of the Female Pelvis, by Dr. David Berry Hart, of Edinburgh (to be read by Dr. Alexander J. C. Skene, of Brooklyn); Fibro-myomata and Fibro-cystic Myomata of the Uterus—their Diagnosis, Prognosis, Pathology, and Treatment; with Cases and Specimens, by Dr. R. Stansbury Sutton, of Pittsburgh; On the Ring of Bandl, by Dr. William T. Lusk, of New York.

A Bad Case of "Snakes."—We have recently received a communication in which the following statements are made:

"When I state that after the death of a dog or person who has been bitten with a poison snake, on examination P. M. there will be found attached to the liver a snake of the same species of the one that bit the dog or person, and if the dog has been bitten twice, there will be two snakes, and in one instance the snake put out its tongue nobody who has never seen it or heard of it will believe it. Yet such is the fact."

"This is why a person or dog who has been bitten with a snake, feels the influence every year, at the time snakes awake up from their dormant state."

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from September 14, 1884, to September 20, 1884:*

CALDWELL, D. G., Major and Surgeon. Granted leave of absence for one month and twenty days, to commence about October 15, 1884. S. O. 95, Headquarters Division of the Missouri, August 16, 1884.

CRONKHITE, HENRY M., Captain and Assistant Surgeon. From Department of the Platte to Department of the Missouri. Par. 1, S. O. 215, A. G. O., September 13, 1884.

TAYLOR, ARTHUR W., First Lieutenant and Assistant Surgeon. From Department of the Missouri to Department of the Platte. Par. 1, S. O. 215, A. G. O., September 13, 1884.

WILSON, WILLIAM J., Captain and Assistant Surgeon. From Department of Dakota to Department of the East. Par. 1, S. O. 220, A. G. O., September 19, 1884.

GARDNER, J. DE B. W., Captain and Assistant Surgeon. From Department of Arizona to Department of the East. Par. 1, S. O. 220, A. G. O., September 19, 1884.

CORBUSIER, WILLIAM H., Captain and Assistant Surgeon. From Department of the East to Department of Arizona. Par. 1, S. O. 220, A. G. O., September 19, 1884.

LA GARDE, L. A., Captain and Assistant Surgeon. From Department of the Missouri to Department of Dakota. Par. 1, S. O. 220, A. G. O., September 19, 1884.

BARROWS, C. C., First Lieutenant and Assistant Surgeon. Granted one month's leave of absence, with permission to apply to the proper authority for an extension of one month. Par. 4, S. O. 86, Headquarters Department of Arizona, September 13, 1884.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending September 20, 1884:*

HARMON, G. E. H., Passed Assistant Surgeon. Ordered from Navy Yard, Norfolk, to Naval Academy, September 16th.

MCCLURG, W. A., Passed Assistant Surgeon. Ordered from Naval Academy to Naval Hospital, Philadelphia, Pa., September 16th.

LEACH, PHILIP, Passed Assistant Surgeon. Ordered from Hospital, Chelsea, Mass., to the Palos, September 16th.

COLES, J. W., Surgeon. Detailed as member and Recorder of Naval Examining Board, and ordered to Hospital, Philadelphia, September 16th.

DEER, E. Z., Passed Assistant Surgeon. Ordered to Navy Yard, New York, September 16th.

MACKIE, B. S., Surgeon. From training ship Jamestown to member and Recorder of Naval Examining Board, September 16th.

KINDLEBERGER, D., Medical Inspector. Relieved from Hartford, sick, September 18th.

DICKSON, S. H., Passed Assistant Surgeon. Permission to leave the United States, September 19th.

Society Meetings for the Coming Week:

TUESDAY, September 30th: American Gynecological Society (Chicago—first day).

WEDNESDAY, October 1st: American Gynecological Society (second day); Medical Society of the County of Richmond, N. Y.

THURSDAY, October 2d: American Gynecological Society (third day); New York Academy of Medicine ("The Three Ton-sils—Some Practical Suggestions as to their Structure, Function, and Diseases," by Francke H. Bosworth, M. D.; "The only Way of raising the Epiglottis in the Anæsthetic State," by Benjamin Howard, M. D., F. R. C. S. E.); Society of Physicians of the Village of Canandaigua, N. Y.

FRIDAY, October 3d: Practitioners' Society of New York (private).

SATURDAY, October 4th: Manhattan Medical and Surgical Society (private).

Letters to the Editor.**"AN ODD CASE."—PERIODICALLY RECURRING CONVULSIONS PRODUCED BY IMPACTED FÆCES.**

COLUMBUS, OHIO.

To the Editor of the New York Medical Journal:

SIR: In your issue of August 16th, Dr. Macauley reports a case in which persistent hiccoughing was due to constipation. *Apræpos* of his case, I will report the following, in which the muscular spasm was much more general:

March 14, 1884, I was called, about 2 P.M., to see Mrs. G., a widow, aged sixty-seven, but apparently much older. I found her in convulsions, involving nearly all the muscles of the body. The eyes were turned up, the eyelids half open and twitching, the limbs jerking about, and there was a slight tendency to opisthotonus. On extending the arms at right angles to the body, they would remain rigid, as in catalepsy, except some fibrillary twitching for some minutes, when they would gradually, and with increased twitching, sink to the side. She was entirely unconscious, and could not be aroused. She had been in this condition for three hours. Previous to this attack she had been about as well as usual, until within a day or two, when, not feeling quite so well as common, she had, on the day previous to my visit, taken a dose of salts, which had operated freely. She had a normal temperature and pulse. Had no headache, nor any other symptom of any centric disease. A most thorough examination failed to reveal any disease of any of the vital organs.

I prescribed bromide of potassium in large doses, and in about two hours she became conscious, the convulsions ceased, and she said she felt as well as usual. She complained of no pain or uneasiness anywhere, and I was at an utter loss to account for the attack. An examination of her urine showed it to be normal. The bromide was ordered continued in diminishing doses.

At eleven o'clock the next day the convulsions returned as before, and, notwithstanding the free use of the bromide, continued as long as on the previous day. This periodical recurrence of the attacks continued for four days, entirely unaffected by the varied sedatives and antispasmodics which were lavishly used. There being an entire absence of any indications of serious disease, and being impressed with the evident reflex character of the convulsions, I now, although her bowels had been reported as open daily, administered a full dose of croton-oil.

This operated very freely thirty or forty times, the nurse said, and on that day there was no return of the convulsions. But on the second day they returned as before, and at the same hour. She was again plied with antispasmodics, but without avail.

As the periodicity of the attacks was so marked a feature, I now administered quinine, thinking there might be a malarial element at the bottom of the trouble. This did no good.

Two weeks had now elapsed, with no perceptible change in the condition of the patient, except that she was weaker. I now recalled that I had treated her several years before for uterine proclivita. She had, however, had no trouble from that source since I had furnished her with a supporter, and had for a long time discontinued the use of the instrument. Suspecting that there might be some irritation at that point, I made a vaginal examination. The uterus was in place, and in the condition of senile atrophy. *But the rectum contained a mass of feces as large as a child's head.* The rest is soon told. The mass was broken down and removed in the usual way, and no more convulsions occurred.

The point of interest in the case is: There had been no history of constipation; the salts taken before I was called had operated freely; there was no constipation subsequent to the commencement of treatment; the croton-oil operated copiously and without scybala, yet the rectum was impacted with a tough mass, resembling blue clay in consistence, without producing any symptoms pointing to the seat of the trouble.

I am at a loss to account for the periodicity of the attacks of convulsions, except as a part of that common tendency of disease and of all functional activity.

Yours truly,

J. F. BALDWIN, M. D.

Proceedings of Societies.**CHICAGO MEDICAL SOCIETY.**

Meeting of September 15, 1884.

The President, Dr. D. A. K. STEELE, in the chair.

Congenital Malformation of the Stomach.—Dr. C. W. EARLE read a brief paper with this title, and related a case that he had recently observed in an infant which lived to be twelve days old. At the autopsy, no opening was found between the stomach and the duodenum, and there was no pylorus, but it was ascertained that biliary matter had been passed in the feces. The stomach was then shown.

Bony Tumor of the Female Pelvis.—Dr. EARLE also presented a specimen of this sort, weighing three pounds and a half. The tumor was regarded as a rare one, and was discussed informally.

National Sanitation.—Resolutions were presented by Dr. LISTON H. MONTGOMERY, calling upon the National Government to strengthen the hands of the National Board of Health in the work of preventing pestilential diseases and in investigations into their nature. The resolutions also provided for the appointment of a committee of seven to draft suitable resolutions to be presented to Congress.

After a full discussion, the resolutions were carried unanimously.

On motion of Dr. E. ANDREWS, a vote of thanks was passed to Dr. Vincent L. Hurlbut for the gift of a collection of three hundred valuable books and pamphlets to the Library Commit-

tee of the society, for the Chicago Public Library, in which there were now twelve hundred medical works.

The PRESIDENT appointed the following-named gentlemen to constitute the committee provided for in Dr. Montgomery's resolutions: Dr. O. C. DeWOLF, Dr. R. E. STAREWEATHER, Dr. L. H. MONTGOMERY, Dr. JOHN BARTLETT, Dr. J. H. ETHERIDGE, Dr. A. R. JACKSON, and Dr. J. H. HOLLISTER. Dr. H. A. Johnson, who would have been appointed on the committee, asked to be excused, on the ground that he was a member of the National Board of Health.

LISTON H. MONTGOMERY, M. D., *Secretary*.

BROOKLYN PATHOLOGICAL SOCIETY.

Meeting of June 12, 1884.

DR. ANDREW OTTERSON in the chair;

DR. A. H. P. LEUF, *Secretary*.

Acute Ulcerative Endocarditis.—Dr. A. H. BUCKMASTER read the history of a case, in which there was rupture of an aortic cusp, with renal embolism followed by hemorrhagic infarction, and showed the specimens.

A Pocket Urinary Test Case.—Dr. E. H. BARTLEY, lecturer on physiological and practical chemistry in the Long Island College Hospital, read the following paper, showed a specimen of the instrument, and illustrated its workings:

Several more or less successful attempts have been made, of late, to provide a ready means of studying the urine at the bedside. Notable among these is the preparation of test-papers saturated with various reagents, intended as tests for albumin and sugar, suggested by Dr. George Oliver.

Previous to having seen this suggestion, I had constructed for my own use a case for the pocket containing a test-tube, litmus test-papers, a urinometer, an alcohol-lamp, and a phial for Fehling's solution.

I have lately had made, by Mr. Haslam, of this city, a number of compact cases which are more complete than my first one, and which I present here to-night.

The case contains four compartments, one for litmus-papers cut in small strips, one for a test-tube containing a urinometer inclosed in a cloth bag for safety in carrying, and the other two containing phials holding powders intended as reliable tests for albumin and sugar. In addition to this, a little dropper is introduced for convenience as a pipette.

The case when shut is $4\frac{1}{2}$ inches long, $2\frac{1}{4}$ inches wide, and one inch thick, or of about the size of an ordinary pocket instrument-case.

This case is intended to give at the bedside the four principal factors in the chemical examination of the urine—viz., the reaction, the specific gravity, the presence or absence of albumin, and the presence or absence of sugar. These points being determined, together with the approximate quantity passed in twenty-four hours, the color, odor, etc., and the symptoms of the patient as a guide, we have most of the points for a diagnosis. Of course, it can not do away with the necessity for a microscopical examination afterward, but in many cases a question of doubt may be determined with something approaching certainty.

With the litmus-paper, the reaction, if alkaline, may be shown to be so from fixed alkalis or from fermentation by warming over a lamp until dry, when in the latter case it will return to the former red color.

The specific gravity, with the quantity passed in the twenty-four hours, gives much valuable information, as follows:

1. Quantity low, specific gravity high (above 1.025), color high: febrile urine.

2. Quantity high, specific gravity high (above 1.025), color light: suspect sugar.

3. Quantity high, specific gravity low (below 1.008), color light: diabetes insipidus.

4. Quantity low, specific gravity low (below 1.015), color light or dark, and containing albumin: suspect Bright's disease.

5. Quantity small, color light, specific gravity low, with cerebral symptoms: suspect uremia.

The quantity of solids passed in twenty-four hours may be found by multiplying the last two figures of the specific gravity by 2 or 2.3, which will give the solids in grammes contained in one litre (one quart). This result, multiplied by the number of litres, will give the solids passed in twenty-four hours.

The normal amount of solids passed is from sixty to seventy grammes. In apothecaries' measure the last two figures of the specific gravity very nearly represent the number of grains to the ounce. By multiplying the last two figures of the specific gravity by the number of ounces passed in the twenty-four hours, an approximate estimate of the number of grains is obtained. This should be between 900 and 1,200 grains. One half of the solids passed is usually estimated to be urea. The specific gravity can therefore be used to give the approximate amount of urea passed. Many other points may be determined by the use of the urinometer, such as the progress of fevers from day to day, etc.

The tests which I have selected for albumin and sugar have been chosen with a view to certainty of action and indications, and those which can be carried in the form of a fine powder.

Two powders are suggested as tests for albumin, both of which are delicate, and, with proper precautions, leave little to be desired as to certainty of indication.

One of these is a mixture of finely pulverized potassium ferrocyanide and citric acid, in the proportion of 3 to 2, although the proportion does not seem to be very important. As the mixture undergoes slight change in the course of some weeks, I prefer to keep the two ingredients in separate stock-bottles, and mix them in the phial at intervals of a fortnight. The decomposition above spoken of does not seem to interfere with the delicacy of the test after two months.

The method of using the test is to add a small quantity of the powder directly to about a drachm of the clear urine in the test-tube. The powder falls to the bottom and there dissolves, forming a concentrated solution; on agitation, the coagulated albumin may be readily seen. A preferable method is to dissolve the powder in a small quantity of water so as to make a strong solution; if it is not perfectly clear and transparent, warm gently (do not boil). The urine may now be delivered upon this reagent with the dropper, when, if any albumin is present, it will appear at the line of separation of the two liquids. The test is quite delicate.

The other test for albumin is made by mixing together one part of mercuric chloride, two parts and a half of potassium iodide, and four parts of citric acid, each to be pulverized and then shaken together. This powder dissolves in water to form a clear solution, upon which the urine may be poured. If the solution should contain any undissolved red iodide of mercury, a little more potassium iodide should be added. Other powders, or papers saturated with other reagents, may, of course, be carried in the phials, if so desired.

—The sugar test proposed is a mixture of one part of indigo-carmin, or sulphindigotate of sodium, and twenty parts of pure sodic carbonate. To use it, it is only necessary to add a very small quantity of the powder to the suspected urine, and heat over a lamp to boiling. If glucose is present, the blue color changes first to green, then violet, red, and finally yellow. On agitation of the tube, the indigo undergoes oxidation by the

oxygen of the air, and the colors mentioned reappear in the reversed order.

I know of no other ingredient likely to be found in urine which will give this indication. The indigo-carmin may be prepared by dissolving pure indigo in strong sulphuric acid, and adding sodium carbonate in sufficient quantity to just neutralize the acid and precipitate the coloring matter; filter, wash with sodic-carbonate solution, and dry the residue.

These tests are not new, but in the powder form I believe that they are more stable and more portable without interfering with their delicacy. A small quantity of the powder only is necessary, and the albumin tests have been so often discussed in the recent periodicals that I do not care to enter into the general discussion. I have found the case here presented of use in my own practice, and presume others may find it of service.

Pleurisy; Absorption of the Effusion; Phthisis; Nephritis.—Dr. THOMAS M. LLOYD, visiting physician to St. Peter's Hospital, related a case as follows:

John T., thirty-three years old, a widower, a cooper by trade, born in Ireland, was admitted into St. Peter's Hospital, March 17, 1884. He stated that he had had no sickness except small-pox, twenty-five years before. Two weeks before his admission, he was taken sick with a chill, fever, cough, and pain in the left side, and went to bed. There was pleurisy, with great effusion, and absence of respiratory murmur and complete flatness on percussion over the whole of the left side of the chest. The heart was pushed to the right of the sternum. The urine was acid, of the specific gravity of 1.009, and contained a trace of albumin. The quantity passed daily amounted to thirty-two fluidounces.

26th.—Respiratory murmur was discovered over the base of the chest, on the left side, posteriorly, where effusion still existed. This observation was confirmed by Dr. Segur and Dr. Martin. The explanation was supposed to be, that the normal respiratory sound was transmitted from the right lung. The respirations were from 28 to 32 to the minute.

The quantity of urine increased to sixty fluidounces under the use of diuretics. The temperature ranged from 101° to 103.4° F. until April 3d, when the respiratory murmur began to return over the left side.

April 15th.—The effusion was apparently absorbed.

18th.—Rheumatic pains developed in the legs, arms, and neck, and the temperature again rose to 103°.

May 1st.—The pains have been modified by treatment, but not entirely relieved. The patient is very anæmic, and his ears, conjunctivæ, and gums are very pale. Prolonged, high-pitched expiration is noted at the apex of the right lung.

5th.—He has become delirious and noisy at night; his evening temperature is 101°; he is passing forty-eight fluidounces of urine in twenty-four hours.

10th.—The urine contains ten per cent. of albumin, is cloudy and alkaline, of the specific gravity of 1.014, and shows granular and fatty casts. The daily quantity can not be ascertained. Delirium and stupor still continue.

11th.—He appeared brighter mentally, and said he felt much better. At 3 P. M. he was seized with convulsions, followed by coma and pulmonary œdema. He died at 12.10 A. M. on the 13th.

At the *autopsy*, both lungs were found bound down by pleuritic adhesions—the left one most decidedly. There was a deposit of recent lymph over a surface about three inches square on the left pleura, posteriorly, at the base. There was about an ounce of serum in the left pleural sac. The lower lobe of the left lung was condensed and much reduced in size, and bound to the upper lobe by firm fibrous adhesions. It weighed twenty-

one ounces. Tubercles and a small cavity were found in the upper lobe of the right lung, which weighed twenty-nine ounces. The heart was normal. The liver, which was fatty, weighed sixty-two ounces. Each kidney weighed seven ounces and a half.

The interesting points were: The continued fever after the almost complete absorption of the effusion; continued free urination to within a very short period before the convulsions, which were probably uræmic; the presence of tubercle on the side unaffected by the recent pleuritic disease.

Dilated and Hypertrophied Heart; Chronic Nephritis; Erysipelas.—Dr. LLOYD also related the following case:

John A., aged forty-nine, born in Finland, a sailor, and of late a longshoreman, was admitted into St. Peter's Hospital April 15, 1884. He had yellow fever seventeen years ago. For two years he has complained of pain on the left side and of forcible beating of the heart; the ankles have been cedematous occasionally, and he has had dyspnoea at times. Three months before his admission, while at the masthead in a severe cold wind, he was seized with sudden pain in the side, marked dyspnoea, and cough. Nine weeks afterward his legs began to swell. When he was admitted his legs were extremely swollen, and the scrotum was as large as a child's head. It had been punctured a few days before, and much serum was draining away daily. He had much dyspnoea. His urine was scanty, light yellow in color, acid, of the specific gravity of 1.011, but contained no albumin. The urates were in excess. The expansion of the chest was found diminished, and the cardiac impulse diffused. There was an apparent tumor in the right supra-clavicular space. There was percussion dullness from the second intercostal space to the sixth, and from the right edge of the sternum to the axillary line, on the left side, over a space ovoid in outline. The respiratory murmur was diminished on the right side anteriorly, at the base, and exaggerated above, with harsh, sonorous râles, on the left side, but diminished below, although to a less degree. Posteriorly, the respiratory murmur was feeble on both sides at the base of the chest, and there was some dullness on percussion over the regions where the respiratory murmur was defective. Forcible pulsation was felt as high as the third rib and to the left of the nipple line. Auscultation showed labored action of the heart, with loud closure of the semilunar valves, but no defined murmur.

Under treatment, the urine was increased to forty-eight fluidounces per diem, and the patient was much more comfortable, with comparatively little dyspnoea, until May 8th, when he had a chill, and a temperature of 105° F. Erysipelas developed on the thigh and the scrotum, he failed rapidly, and died on the 11th.

At the *autopsy*, the left lung was found bound down to the chest-wall from the third rib to the base by strong adhesions. The right lung also was adherent from the fourth rib to the base. The right lung weighed nineteen ounces, and the left one fifteen ounces. The bronchial tubes were thickened and dilated. The heart was dilated and hypertrophied, weighing when filled with clots thirty-seven ounces, and when empty twenty-three ounces. The pericardial fluid amounted to eight fluidounces. The heart occupied the region previously outlined by percussion. The liver, which had the nutmeg appearance, weighed seventy-two ounces. The kidneys weighed seven and a half and nine ounces.

The dilated and over-filled heart had operated to interfere with respiration in much the same way as an aneurysm. The corresponding lung was much reduced in size and weight.

Acute Tuberculosis.—Dr. LLOYD then related the following case:

Alfonso S., an Italian, aged thirty-five, who had been in this

country four months and a half, was admitted into St. Peter's Hospital, April 15, 1884. He was said to have vomited a large quantity of blood on rising in the morning two weeks before, but none since. He had had diarrhea for four days, with pain in the abdomen; also a chill every night, followed by fever. The urine continued free. Harsh respiration was found over the right lung, with tubular breathing and marked bronchophony at the base of the left lung. Afterward subcrepitant râles were heard, which increased in number and extended from day to day. The temperature ranged from 103° to 104° F. in the evening, and was not controlled by large antipyretic doses of quinine and salicylate of sodium. He failed rapidly, and died May 11th.

At the *autopsy*, both lungs were found tubercular throughout, and there was a small cavity in the left apex. The base of the left lung was greatly congested. Tubercles were found in the large intestine and through the greater portion of the small intestine, being most numerous near the ileo-cæcal valve; they were not found on the peritoneal surface of the intestine. The liver was fatty. The kidneys presented minute extravasations of blood, but no other lesions. Nothing was found in the stomach to account for the hemorrhage.

An interesting feature of the case was the marked absence of cough and expectoration, owing to the presence of diarrhea. The development of the disease was apparently quite rapid, although it was impossible to obtain a satisfactory history.

A Mammary Tumor, of doubtful character, was presented by Dr. JOHN HARRIGAN.

MEDICAL SOCIETY OF VIRGINIA.

Fifteenth Annual Meeting, held at Ruckley Springs, Tuesday, Wednesday, Thursday, and Friday, September 9, 10, 11, and 12, 1884.

Tuesday's Proceedings.

The meeting was called to order at 8.30 p. m., the President, Dr. J. EDGAR CHANCELLOR, of Charlottesville, in the chair. About one hundred and thirty members were present during the meeting, and at the opening session there were many ladies in attendance, including the wives and daughters of a number of the members.

Dr. GEORGE T. HARRISON, of New York, and Dr. F. M. ROBERTSON, of South Carolina, were present by invitation.

The Address of Welcome was delivered by Dr. M. G. ELLZEY, of Washington, D. C., the resident physician at the Springs during the summer season. It was courteously responded to by the President.

After prayer by the Rev. Dr. MALLECK, of Philadelphia, Pa., Dr. ROBERT I. HICKS, of Cassanova, delivered **The Address to the Public and Profession on Hygiene in Relation to the Private Family**. He spoke of the relationship of individual sanitation and public health, laid stress upon the importance of the germ theory, as enunciated by Pasteur, Koch, and others, and spoke of the diseases resulting from ignorance on the part of the people in regard to medical matters. Good quarantine laws should be enforced wherever or whenever an epidemic of a preventable disease existed. Legislation could do little else than enact laws, which, in most cases, were feebly executed, but, if carried out, would result in general good. Cleanliness of mind, body, and surroundings was the great principle of hygiene, both as to the individual and as to the public. Everybody ought to seek education on this subject, both for their personal interests and for the welfare of their communities. Hereditary influence, perhaps, controlled about 25 per cent. of diseases, but 74 or 75 per cent. of preventable diseases, according to a recent New York report, were due to such causes as damp, foul air,

insufficient food, poverty, and filth. Tubercle itself was simply an alteration of nutrition, resulting from neglect of trivial complaints and a disregard of sanitary laws. Gout, Bright's disease, dyspepsia, etc., were preventable diseases.

The location of the private residence next engaged attention. He said that pure air was antiseptic, and that from 1,200 to 2,000 cubic feet of it must pass through a room every two or three hours to make it wholesome for an adult to live in. The importance of ventilation, of light, of the removal of vegetable decomposing matters, etc., was pointed out. A person, by neglect, might not only produce disease in his own family, but spread it to his neighbors. Hence the economy to public health of enforcing personal hygiene.

On motion of Dr. BENJAMIN BLACKFORD, the address was ordered to be published.

Wednesday's Proceedings.

The Report on Advances in Anatomy and Physiology, prepared by Dr. HUGH T. NELSON, of Charlottesville, was read by Dr. LANDON B. EDWARDS, of Richmond, by request of the author, who was unavoidably absent. The object of the report was to present some recent but well-established additions to our knowledge of the physiology of the blood, the process of digestion, the intra-cranial nerve-system, the reporter confining his remarks on the latter subject to the sensory portion of the encephalon, since there had not recently appeared any additions to our knowledge of cerebral motor centers and their connections. The report bore upon the importance of alimentation in disease, especially recommending peptonized meats for the sick.

Medical Legislation.—Dr. WILLIAM C. DABNEY, of Charlottesville, Chairman of the Committee on Medical Legislation, reported that the committee had secured the passage of a bill by the Virginia Legislature establishing a State Board of Medical Examiners. The law was to go into effect January 1, 1885. It was not perfect, but was the best that could be secured. No person could hereafter enter upon practice in Virginia without first passing a satisfactory examination before this board. The penalty for violation of the law was a fine of \$500. The report was received and ordered to be published.

The President's Annual Address was then delivered. The President congratulated the society upon the large attendance at the meeting, the partial success of the Committee on Medical Legislation, etc., and spoke touchingly of the unusually large number of Fellows who had died during the year. He selected as his subject *the Origin and History of Ancient Medicine*. He incidentally urged further prosecution of medical legislation in regard to the Medical Examiners' Board and the State Board of Health, and advised that a history be written of the illustrious medical men of the State.

The address was well received, and ordered to be published.

Dr. JOSEPH A. WHITE, of Richmond, presented a volunteer paper on *Naso-Pharyngeal Obstruction and Hypertrophies in their Relation to Hearing*. It was a paper of the highest practical worth, suggesting many points of value to the practitioner. It was ordered to be published.

Election of Officers.—At the afternoon session the following-named gentlemen were elected officers for the ensuing year: Dr. S. K. JACKSON, of Norfolk, President; Dr. JESSE EVELL, Sr., of Hickory Grove, Dr. BENJAMIN BLACKFORD, of Lynchburg, and Dr. R. I. HICKS, of Cassanova, Vice-Presidents; Dr. LANDON B. EDWARDS, of Richmond, Recording Secretary; Dr. HUGH M. TAYLOR, of Richmond, Corresponding Secretary; and Dr. R. T. STYLL, of Richmond, Treasurer. The former Committee of Nominations, Committee on Publication, and Executive Committee were re-elected.

A night session, lasting from 8 p. m. until 2 a. m., was occu-

pied in the **Election of Members of the Board of Medical Examiners**, under the recent law establishing the State Board of Medical Examiners. The complimentary votes were for the two "Examiners at large." Dr. WILLIAM C. DABNEY, of Charlottesville, and Dr. FRANCIS D. CUNNINGHAM, of Richmond, received these compliments. Each of the ten Congressional districts made its own nominations, and most of those so nominated were elected as follows: *First Congressional District*: Dr. S. W. CARMICHAEL, of Fredericksburg; Dr. O. B. FINNEY, of Onancock; and Dr. W. W. DOUGLAS, of Middlesex County. *Second District*: Dr. THOMAS B. WAED, of Norfolk; Dr. L. LANKFORD, of Bowers; and Dr. JESSE H. PECK, of Elizabeth City County. *Third District*: Dr. R. A. LEWIS, Dr. CHARLES R. COLLEN, and Dr. O. A. CRENSHAW—all of Richmond. *Fourth District*: Dr. HUGH STOCKDELL, of Petersburg; Dr. WILLIAM J. HARRIS, of Nottoway County; and Dr. J. HERBERT CLAIBORNE, of Petersburg. *Fifth District*: Dr. RAWLEY W. MARTIN, of Chatham; Dr. WILLIAM L. ROBINSON, of Danville; and Dr. T. B. GREER, of Rocky Mount. *Sixth District*: Dr. HARVEY BLACK, of Blacksburg; Dr. H. GREY LATHAM, of Lynchburg; and Dr. OSCAR WILEY, of Roanoke. *Seventh District*: Dr. WILLIAM P. MCGUIRE, of Winchester; Dr. J. H. NEFF, of Harrisonburg; and Dr. H. T. NELSON, of Charlottesville. *Eighth District*: Dr. ALEXANDER HARRIS, of Jeffersonson; Dr. C. C. CONWAY, of Rapidan; and Dr. BEDFORD BROWN, of Alexandria. *Ninth District*: Dr. S. W. DICKINSON, of Marion; Dr. ROBERT J. PRESTON, of Abingdon; and Dr. R. D. HUFFARD, of Chatham Hill. *Tenth District*: Dr. G. D. MERRIWETHER, of Pedlar's Mills; Dr. Z. G. WALKER, of Brownsburg; and Dr. H. M. PATTERSON, of Monterey.

Thursday's Proceedings.

Communications.—After the society convened, president in the chair, a telegram from the first president (1870) was read in answer to one sent yesterday afternoon expressive of the feelings of the society in regard to his recent affliction. The telegram of Dr. ROBERT S. PAYNE, of Lynchburg, manifested the same zeal and anxious love for the society that he had so often proved by his attendance and active participation in the proceedings heretofore, and by his earnest good advice now expressed as the father of the society. A number of pleasurable and complimentary letters from invited guests outside the State as well as some from prominent men within the commonwealth were read, and ordered to be filed. Among these letters was one from Dr. WILLIAM W. PARKER, of Richmond, offering a resolution opposing eleemosynary medical colleges, which was adopted. Another was from Dr. GEORGE E. RIVES, of Rives, Prince George County, objecting to the power placed in the governor's hands to veto the action of this society as to the nomination of the members of the State Board of Medical Examiners.

A Memorial of the late Dr. J. Marion Sims was presented by Dr. SAMUEL B. MORRISON, of Brownsburg. It was eloquent in language, expressing the sympathy that members felt for the illustrious father of modern gynecology. On motion of Dr. URSHUR, the memorial was adopted by a rising vote and ordered to be recorded.

Dr. J. M. TONER, of Washington, D. C., was elected an Honorary Fellow of the society.

Dr. S. B. MORRISON, of Brownsburg, presented the **Report on Advances in Obstetrics and Diseases of Women**. It was a practical paper.

Dr. J. N. URSHUR thought want of success was often due to too harsh treatment. Soothing applications oftentimes had a better effect. Posterior cervical section was valuable in many cases. He had frequently performed it, with good results in every instance.

Dr. GEORGE T. HARRISON, of New York, read a paper, by invitation, on **The Modern Treatment of Wounds**, in which he specially advocated antiseptics.

Dr. MORRISON thought it best to let wounds alone. He had seen many cases during the war, and some since, in which the too anxious introduction of the finger or the probe did more injury than the wound itself.

Dr. HUNTER MCGUIRE, of Richmond, praised the paper read by Dr. Harrison, but he thought perhaps the good suggestions made in it in regard to antiseptics in general might lead some country practitioners to become dissatisfied with the means they had always at hand—good, pure country air. Lister's original recommendations undoubtedly added to the fatality of surgical operations. He was glad that plan had now been generally abandoned. "Antiseptic surgery" is undoubtedly good in great hospitals where the floors, the walls, and the beds were impregnated with septic poisons. But for country practitioners cleanliness was all that was essential—cleanliness of the person, of the patient, of the nurses, and of the surroundings.

Dr. I. H. STONE, of Lincoln, thanked Dr. McGuire for his practical remarks, which must give encouragement to every country practitioner. He cited several cases that had come under his care where antiseptics were not used and yet good results followed.

Dr. MORRISON urged the use of antiseptics in obstetric practice, so as to prevent puerperal fever, etc.

Dr. NEFF, of Harrisonburg, was glad Dr. McGuire had said what he had for his own encouragement. He used carbolic cotton, etc., as surgical dressings.

Dr. WILLIAM L. ROBINSON, of Danville, agreed with Dr. Morrison as to the importance of antiseptics.

The PRESIDENT thought there was no excuse nowadays for the neglect of antiseptic measures in the treatment of every case in obstetric practice.

Dr. MCGUIRE remarked that he was referring to the general field of surgical practice in his remarks. In obstetric practice he fully agreed as to the importance of antiseptics.

Dr. LANKFORD, of Southampton, thought it almost criminal for surgeons to do as he had seen some country doctors do—get off their horses with sweaty hands, etc., and go at once at the performance of a surgical operation without antiseptic precautions.

Dr. ALBAN S. PAYNE, of Markham, agreed with Dr. McGuire.

Dr. RIVES TATUM, of Harrisonburg, believed that Dr. Lankford was right.

Dr. JESSE EWELL, Sr., of Hickory Grove, who had been some fifty years in active practice, always used soap and water before doing a surgical operation or making a vaginal examination in obstetrical cases.

Dr. HUNTER, of Frederick County, said he always carried with him, when attending a case of infectious disease, a solution of carbolic acid in glycerin, with which to bathe his hands before making a vaginal examination of a pregnant or parturient woman.

Dr. ALEXANDER HARRIS, of Jeffersonson, read a paper on the **Therapeutic Virtues of the Fauquier White Sulphur Springs, Va.**, in which he showed that, of a large number of mineral waters of this country and Europe, only two contained ferric phosphates, and the Fauquier Springs water contained a larger percentage than these two. To this ingredient he attributed its great virtue in all the modern forms of neurasthenia, both in males and in females.

Honorary Fellows.—At the afternoon session, on motion of Dr. Hunter McGuire, Dr. GEORGE T. HARRISON, of New York, and Dr. F. M. ROBERTSON, of South Carolina, were elected Honorary Fellows.

Dr. ROBERTSON read a paper on **Rawley Springs**, which he had presented before his State society, and which had been published in the recent volume of its "Transactions."

Dr. HUNTER MCGUIRE, of Richmond, read a paper on **Intestinal Obstruction**, reviewing mostly the points of diagnosis. As to treatment, he urged the use of opiates hypodermically, rest, composure, etc. He strenuously opposed purgation. As soon as distinctive symptoms of invagination or the like could be made out, the abdomen should be opened and an attempt made to relieve the intestine of its unnatural position.

Dr. WILLIAM H. COGGESHALL, of Richmond, read a paper of great practical interest reviewing the subject of **Rectal Etherization**. It was evident that it was not so serviceable as the inhalation method; but, in some cases, where circumstances contra-indicated inhalation, ether should be given by the rectum. The great trouble to be apprehended was the setting up of bloody diarrhoea or dysenteric evacuations.

Dr. WILLIAM G. ROGERS, of Charlottesville, Chairman of the Committee on **Restriction of the Sale of Narcotic Poisons, especially Opium, its Products, Chloral, and Chloroform**, presented a paper showing great study and research, and advocating some definite legislation so as to lessen the danger to which the public was now exposed.

The Treasurer, in his report, stated that he had received \$1,016; that \$757.45 had been expended during the year, and that a balance of \$258.55 remained in the treasury.

Dr. JOSEPH A. WHITE, of Richmond, offered a resolution, which was adopted, appointing a committee of five members for the purpose of conferring with the physicians of North Carolina and West Virginia with a view to organizing a Tri-State Medical Society.

At the evening session Dr. M. A. RUST, of Richmond, read a volunteer paper on **Typho-Malarial Fever**. He showed that the disease was not a new one by any means—that from nearly the middle of the last century it had been recognized under other names, and in our younger days was familiarly known as "bilious fever," etc. It was neither typhus fever nor typhoid fever, nor was it a pure malarial fever, as the term malarial is generally used to indicate a special class of fevers of marsh miasmatic origin. It was a special fever which was common enough in our tide-water cities particularly. The recent epidemic of the so-called "Richmond fever" was nothing but typho-malarial fever. The thermometric curve was not like that characteristic of typhoid fever, nor like that of simple, uncomplicated malarial fever. In pure typhoid fever, the best treatment was "no medicine except to meet special indications." Sustain the vital powers by alcohol, beef-tea, etc. Boiled milk was the special diet. Quinine was useful in typho-malarial fever, but of no appreciable service in typhoid fever.

Dr. I. S. STONE, of Lincoln, presented a volunteer paper on the use of **Massage and Electricity in the Treatment of Chronic Hysteria and Allied Nervous Diseases from the Standpoint of the General Practitioner**. The plan of treatment he recommended was of special value in cases of functional trouble. He borrowed much of the advice given in the writings of Dr. Weir Mitchell as his guide. Exercise should be *passive* while the patient was in bed; and she should be kept in a quiet apartment, with a good nurse, without too much light, and allowed an abundance of nourishment, such as skimmed milk, etc., while properly conducted massage and properly directed currents of electricity were applied.

The meeting then adjourned to partake of the hospitalities extended by the proprietor of the Springs, in the form of a banquet, which was intensely enjoyed by the members until about two o'clock at night. Numerous toasts were given, and some of the speeches were eloquent.

Friday's Proceedings.

The society convened at 9 A. M. to enter upon the discussion of **Malarial Fever**. Dr. ROBERT B. STOVER, of Richmond, who had been appointed to open the discussion, was unable to be present, but forwarded his paper, which was read, by request, by Dr. UPSHUR. The writer thought the epidemic, of terrible severity and of great extent, in the city of Richmond during the past spring had resulted chiefly from the drinking-water used. The reservoir was mostly supplied by a canal, having its head some eight or nine miles above the city, in the James River, but into which, nearer the city, some marshy lands emptied their poisonous streams. There was also this other misfortune, that, in those parts of the city where the disease chiefly prevailed, earth was being upturned and mains were being laid. Then it must be remembered that the spring was a "forward" one, bringing out vegetation in advance of the usual season. He spoke of the pathological changes noticed in the kidneys, and thought that, if the disease was early enough attacked by appropriate remedies, such lesions could be averted. He generally began treatment with calomel and soda, followed up by tincture of iron and sulphate of quinine. Quinine was undoubtedly the truest friend in such cases. Morphine, in conjunction with quinine, was often needed to quiet nervous perturbations.

Dr. UPSHUR did not agree with Dr. Stover as to the water-supply having been the cause of the Richmond epidemic. The reservoir-water of that city had been chemically and microscopically examined by experts without the detection of any impurity. Besides, the disease prevailed in parts of the city not supplied by the reservoirs—where springs and wells were used. He thought the cause probably atmospheric. The disease was met with, for the most part, in children or young adults. It was not typhoid fever. He reported several illustrative cases.

Dr. WILLIAM L. ROBINSON, of Danville, read a paper descriptive of the effect of the epidemic wave of this same disease as it swept over his city. Quinine used hypodermically was beneficial. The milk diet was generally rejected from the stomach. Beef-tea, with its natural salts, was much better tolerated.

Dr. THOMAS J. MOORE, of Richmond, remarked that malaria had no known limits of territory. While it swept the valleys and the level lands, it always found a resting-place in marshy sections. It, nevertheless, under some untoward breeze, climbed mountain-heights and went with a vengeful furor into the delis beyond. Such was not the history of typhoid fever, nor were the symptoms alike. Heat, moisture, and vegetable decomposition were the essential factors of malarial disease—whether it appeared as the simple intermittent fever or as complex typho-malarial fever. Drainage of wet lands might be of service. Barriers might possibly be interposed between the affected region and the otherwise healthy homes by the planting of such trees as the now famous eucalyptus. He spoke at length of the two forms of malarial fever that caused the greatest alarm because of their fatality—the hemorrhagic and the "pernicious." In all grave cases he would use quinine hypodermically; and, if the nervous symptoms of excitement, etc., were great, would combine it with morphine. Warburg's tincture, similarly used, was very valuable. He had first seen it recommended by Dr. Metcalfe, of New York.

Dr. M. A. RUST, of Richmond, thought the sooner we dismissed the term typho-malarial fever from our terminology the better for us as practitioners. He would simply add to the remarks already made that the atmospheric air traveled ordinarily at the rate of about seven feet a second. Hence atmospheric germs, springing up at one point, could not remain long in one place, unless they were being continuously reproduced, and thus

lengthened their lines of infection by pressing winds. The term "typhoid fever modified by malarial poison" involved a theory that was not supported by fact. If we admitted such a theory, it was as well to admit the term typho-malarial fever as a proper one. But in his paper, read last night, he had shown that "typhoid fever must necessarily present all grades and shades of severity."

On motion, all papers not thus far disposed of were ordered to be referred to the Publishing Committee. Under this resolution a paper by Dr. JOSEPH A. WHITE, of Richmond, entitled Remarks, etc., about Cataract, with Report of Fifty-two Cases, and a paper by Dr. EDWARD E. FIELD, of Norfolk, on Yellow Chills—a Comparatively Recent Manifestation of Malaria, were referred, without reading, to the Committee on Publication.

On motion of Dr. JOSEPH A. WHITE, of Richmond, delinquents were allowed until November 10, 1884, to pay up their dues, so as to have their names appear in the Register of Fellows.

On nomination by the President, Dr. WILLIAM SELDEN, of Norfolk, was elected an Honorary Fellow.

Scarlet Fever was selected as the subject for general discussion at the next annual session, and Dr. THOMAS J. MOORE, of Richmond, was chosen to open the debate.

Dr. H. M. CLARKSON, of Haymarket, was elected to deliver the Annual Address to the Public and Profession during the session of 1885, at Alleghany Springs.

Mr. A. C. CALHOUN, proprietor of Alleghany Springs, on the line of the Norfolk and Western Railroad, fifty or sixty miles beyond Lynchburg, in the section known as Southwest Virginia, invited the society to meet there next year without personal charge to members or delegates as to hotel or other accommodations, except for the stages from the depot, which is not over two miles distant. The invitation was accepted.

At the Rawley Springs more than was expected was provided for the comfort and pleasure of the society.

Miscellany.

Infant Digestion.—In the July number of the "Archives of Pediatrics," Dr. H. R. Bigelow, of Washington, says:

"The question of infant growth is one of assimilation. Assimilation of food will depend upon the integrity of the digestive function. The digestive system of the new-born is not formulated at once, but develops in logical ratio with the expansion of other parts of the body. Its measure is the requirement necessitated by the elaboration of tissue. Tissue-growth is a slow process, demanding especial nourishment, and varied at each advance in age. The necessities of the child, both chemical and physiological, are not those of the adult, because each is adjusted with great exactness to the immediate environment. The excess of non-nitrogenous matter, which is an essential to adult life, is pernicious to the well-being of the infant. Muscles, when at work, consume principally hydrocarbonaceous aliments, and not albuminoid substances. In the infant there is no muscular exertion, and hence it draws more largely for its development upon the nitrogenous substances than upon the hydrocarbons. At birth the alimentary tract is short, the cæcum being very small, and the masticatory organs are absent. Biber says that the ptyalin appears only with the cutting of the first tooth. Reasoning from analogy, it is not improbable that the pancreatic and intestinal ferments are also inoperative until about the eighth month. Nature is not a spendthrift, and she would not call into useless action any function not demanded by the necessities of her own handiwork. With the eruption of the teeth a new era begins. Mastication presupposes increased development. Increase of development calls for increase of nourishment, and increase with variety in nourishments sets up new digestive processes, in which the ptyalin and the other ferments play an important part.

"The alimentary tract of the infant is exceedingly susceptible, so that nursing women have to be very careful in their diet. Now, if this tract is so impressionable as to feel any departure from a standard diet in the mother, how much more seriously will it suffer in the administration directly of unwholesome cow's milk—not unwholesome, perhaps, in the light of general use, but unwholesome for the limited infantile digestion. It may have an acid reaction, or it may have come from a cow in heat, or it may be tainted with certain vegetable substances obnoxious to the child. The natural food of the baby is its mother's milk.

"An intelligent study of human milk will lead up to a more just comprehension of the demands of infant digestion, and to a more perfect knowledge of a physician's duty in prescribing for such cases as are, unfortunately, deprived of the mother's breast. It would be a valueless encumbering of space, and an expenditure of time without profit, to cite one half the analyses that are matters of record. It best subserves the present purpose to view the main constituents of human milk in their relation to certain physiological principles. It is to be noticed, first, that woman's milk has an *alkaline* reaction, which persists for an indefinite period, and a specific gravity of about 1.0317. It contains water largely in excess (89.20 in 100 parts), milk-sugar, nitrogenous matter, fat, and salines. The albuminoids will vary in different women so largely that we can not affirm that any analysis is infallible. A fair average percentage would probably be about 4.84. The milk-sugar (6.997) is much greater than in cow's milk (4.92). These figures are only approximately correct. No two samples yield the same results. This variability in the composition of woman's milk, if not pathological, is a wise dispensation of nature to provide for the exigencies of each month of advancing age. Thus the function of the milk-sugar as a heat-producer is kept constantly in mind, while the absolute rate of nutrition may vary within wide limits, because the bodily heat must be preserved at all hazard. In fat, woman's milk exceeds that of the cow, but falls far below it in albuminoids. The ash, or mineral constituent of milk, is chiefly concerned in metamorphosis. The basic phosphate of sodium is invariably found in the blood, while the acid phosphate of potash is the chief constituent of the juice of the flesh. Phosphate of lime is intimately incorporated with the nitrogenous constituent principles. It is very generally admitted that the carbohydrates lead on to fat-production, through the co-operation of the nitrogenous and saline elements. Nitrogenous elements themselves, when in excess, may also serve as a source of fat. Nitrogenous matters do not, probably, undergo complete oxidation within the body; a portion of them is eliminated as urea. Fatty compounds are of higher value as force-producers, because they contain a quantity of hydrogen as well as of carbon free for oxidation. Pavy says that the value of nitrogenous compounds as force-producers depends upon the amount of unoxidized oxidizable elementary matter they contain. In human milk the percentage of nitrogenous matter to carbohydrates is about 1.45. About one fourth part of its casein is coagulable by acid. The *alkaline* reaction is *highly valuable*, since it serves to convert the casein into *soluble albuminoids* and soluble carbohydrates, which are great heat-producers. Writing upon this subject, Küss says: 'It is generally admitted (Moleschott, Voit) that an adult consumes 320 grammes of carbon and 21 grammes of nitrogen, or, in other words, 130 grammes of albuminoid elements, and 488 grammes of hydrocarbons and fats (fats 84, hydrocarbons 404); it follows that, in this case, the normal proportion in a mixed diet, of nitrogenous to non-nitrogenous aliments, is 1 to 3.7, while in milk, as well as in the egg, the proportion is 1 to 3, or even 1 to 2; in other words, the quantity of albuminates (nitrogen) is much larger, and of hydrocarbons (carbon) much smaller. This fact may be easily explained by referring to the part played by the hydrocarbons in regard to the production of force—muscular force especially. The adult draws his forces from the combustion of non-nitrogenous substances, the albuminates scarcely serving for this purpose. On the other hand, when the organism is in course of development, the nitrogenous substances are indispensable to the growth of the different tissues. It is therefore easy to see how mistaken is the common practice of condemning children to a diet containing a large quantity of starch and scarcely any nitrogen.'

"Woman's milk contains no starch. It may be conceded that, in

the adult, the ptyalin may continue its action in the stomach; that particles of unconverted starch may be transformed by the pancreatic and intestinal juices. In the infant this rule can not apply. The baby does not secrete ptyaline until the sixth or eighth month, *neither do the other juices, of pancreas and intestine, have any transforming power whatever before that period.* It is sheer ignorance to assert that small particles of starch can do no harm, since they undergo transformation in the intestine, when the truth is that they not only act as irritants, but pass out of the bowels unchanged. The attenuant of woman's milk is an important factor, of which we have little absolute knowledge. It is chiefly in consideration of this point that *cow's milk can not ever be safely substituted for that of the mother.* Before it can satisfactorily approximate to this great food of nature it must be radically transformed by some chemical process, which science has not yet developed. The addition of water to cow's milk will reduce the percentage of albuminoids into harmonious relationship with human milk, but it does not suffice to change the characteristics of the clot. To use starch as an attenuant is, of course, radically wrong.

"In view of these facts, it becomes a matter of the utmost interest to establish some definite principles of treatment, in cases where the mother is unable for any reason to nourish her child properly and sufficiently. There is no known process, chemical or mechanical, by which cow's milk alone can subserve this purpose. Up to six months of age, at least, the baby needs just those equivalents found within the mother's breasts—nothing more and nothing less. The compound must be *alkaline* in reaction; it must contain no *cane-sugar* (because cane-sugar must be first converted into grape-sugar before it can be assimilated; cane-sugar is frequently subjected to a kind of acetous fermentation, producing excess of acids in the infant stomach, so that bodily heat will diminish and disorders of respiration and circulation will follow), and no *starch*. It must be rich in heat-producers, although, as I have said before, the amount of albuminoids may vary greatly. Position has something to do with digestion. In some bad cases it will be found that, if the infant be placed in the usual position of a nursing child in its mother's arms, it will assimilate its food, when artificially fed, much more readily. In the nursing child a by no means inconsiderable amount of heat is derived from the mother's body. An artificially fed infant is deprived of this, so that there should be some compensatory action in its food. There have been many attempts made to overcome this difficulty, and our journals have been full of discussions upon the matter. It may be said that no artificially prepared food that does not meet all these requirements will be of permanent value in infantile therapeutics. What is needed is something rich in carbohydrates, with a proper admixture of albuminoids, salts, and moisture, free from starch and sugar, and alkaline in reaction."

Dr. Bigelow then gives notes of three cases of disease in infants, with disturbed digestion or assimilation, in which great benefit attended the use of Mellin's food. "I satisfied myself," he says, "by personal analysis of the constituents of the preparation, and found that it contained the principles which it seemed to me nature demanded, in exact combination, and more satisfactorily and more cheaply prepared than I could compound upon my own prescription."

A Naval Medical Examining Board, for the purpose of examining candidates for admission to the medical corps of the navy, will convene at the Naval Hospital at Philadelphia on October 1, 1884. There are at present several vacancies in the list of assistant surgeons, and successful candidates will be immediately appointed.

The Laws of the United States (*vide* Revised Statutes, Sections 1368, 1370, 1428, 1471, 1474) provide that "the active list of the medical corps of the navy shall consist of a surgeon-general, with the relative rank of commodore; fifteen medical directors, with the relative rank of captain; fifteen medical inspectors, with the relative rank of commander; fifty surgeons, with the relative rank of lieutenant-commander or lieutenant; and one hundred assistant surgeons, with the relative rank of master or ensign; and, further, that no person shall be appointed assistant surgeon until he has been examined and approved by a board of naval medical officers designated by the Secretary of the Navy, nor who is under twenty-one or over twenty-six years of age, nor who is not a citizen of the United States."

Applicants for examination and appointment in the medical corps will apply to the Hon. Secretary of the Navy for permission to appear before the medical examining board.

The application must be in the handwriting of the candidate, stating age and place of birth.

ORDER OF EXAMINATION.—1. *Physical.*—This will be thorough, and, in addition, the candidate will be required to sign a certificate that he is free from any accidental or constitutional defects, and without any predisposition to disease. 2. *Literary and Scientific.*—Familiarity with the branches taught in well-organized schools will be required, and this must include, at least, an elementary knowledge of Latin. Acquaintance with the natural sciences, ancient and modern languages, and the higher mathematics will be considered, and due credit given for proficiency in any of them. 3. *Professional.*—Oral and written examination will include anatomy, physiology, surgery, science and practice of medicine, obstetrics, diseases of women and children, chemistry, medical jurisprudence, materia medica and therapeutics, pharmacy, and hygiene. There will be also clinical examinations at a hospital, involving the use of the thermometer, laryngoscope, ophthalmoscope, and microscope as aids to diagnosis, and surgical operations upon the cadaver.

The board will expect candidates to present respectable testimonials of moral and professional standing. Appointments will be made as vacancies occur, in the order of merit in which candidates are reported by the board, when a vacancy is to be filled, but a qualified candidate not appointed within a year must be re-examined. A candidate found not qualified will not be permitted to reappear for examination within a year.

When no interruption occurs, the examination is usually completed within a week. No allowance can be made for the expenses of persons undergoing examination.

FORM OF APPLICATION. (To be in the handwriting of the applicant):

_____, 187__.

To the Hon. Secretary of the Navy:

SIR:

I respectfully make application for examination as to my qualifications for appointment as assistant surgeon in the United States Navy. I was _____ years of age on the _____ day of _____, 187__, and reside in _____, county of _____, and State of _____.

Very respectfully,

PAY TABLE.	At sea.	On shore duty.	On leave or waiting orders.
Fleet surgeons and engineers	\$4,400	....	....
Medical directors and medical inspectors at sea	4,400	....	....
Surgeons at sea:			
First five years after date of commission	2,800	\$2,400	\$2,000
Second five years after date of commission	3,200	2,800	2,400
Third five years after date of commission	3,500	3,200	2,600
Fourth five years after date of commission	3,700	3,600	2,800
After twenty years from date of commission	4,200	4,000	3,000
Passed assistant surgeons:			
First five years after date of appointment	2,000	1,800	1,500
After five years from date of appointment	2,200	2,000	1,700
Assistant surgeons:			
First five years after date of appointment	1,700	1,400	1,000
After five years from date of appointment	1,900	1,600	1,200

The Vaccination of School Children in Illinois.—At the regular quarterly meeting of the State Board of Health, held in the city of Springfield, July 2 and 3, 1884, the secretary, in his report to the board, made the following comments and suggestions:

With regard to further action concerning small-pox, in view of the probability of its epidemic spread from abroad, as shown by its increasing prevalence in London and elsewhere, and its frequent introduction into the State from neighboring States, I would suggest that it is desirable to call the attention of sanitary authorities and others to these facts and to the experience of the last few months, which shows that, when the disease is introduced into a community where vaccination and revaccination were not thoroughly carried out during the recent epidemic, there is still danger of serious trouble. It is also important that county superintendents, school boards, and others interested, should have their attention again directed to the fact that the *School-Vaccination Order of the board is permanent and continuous*, and that its thorough enforcement is expected, so as to prevent any accumulation of unprotected or imperfectly protected scholars, from term to term. To this end I think it necessary to again print and distribute copies of the Order, with necessary instructions, together with supplies of certificates and blanks for returns to be made through the county superintendents by the first of January next.

In view of the foregoing considerations, the board subsequently adopted the following resolution:

Resolved, That the increasing prevalence of small-pox in London and elsewhere, indicating a probable renewal of the epidemic tendency, and its frequent introduction into Illinois from neighboring States within the past few months, make it desirable that vaccinal protection be secured as fully as possible in every portion of the State; and to this end the secretary is hereby authorized to call the attention of sanitary authorities and others to the subject, and to take the necessary steps to push the further enforcement of the School-Vaccination Order of the board, so that all new scholars, and those who have not heretofore fully complied with its provisions, may be properly protected against small-pox before the advent of cold weather.

In accordance with this action of the board, county superintendents of schools, school directors, trustees, and teachers, are hereby reminded that the admission of any child to a public school in this State without presenting satisfactory evidence of proper and successful vaccination is prohibited.

The following extracts from opinions of the Attorney-General define the rights and duties of all concerned in this matter:

Under the Revised Statutes of Illinois, Chapter 126a, Section 2, broad duties are devolved upon the State Board of Health, and ample power is given to enable them to discharge such duties. They not only have the right, *but it is their duty*, to make any and all rules and regulations which they may deem necessary to preserve the public health. Such rules and regulations when promulgated *have the force and authority of law*, and are to be enforced, if necessary, by the entire power, including school officers, etc., of the State.

... As to the authority of school directors to enforce the rules of the State Board of Health in reference to vaccination, I have the honor to say that Section 2 of the act creating the State Board of Health declares that "it shall be the duty of all police officers, sheriffs, constables, and all other officers and employees of the State, to enforce such rules and regulations, so far as the efficiency and success of the board may depend upon their official co-operation." These are the words of the law, and it includes school directors with all other officers. In enforcing the orders of the Board of Health, of course the law will protect them in using any necessary means to carry out the orders, even to the extent, should it become necessary, *of excluding from the school those who refuse to comply*.

Based upon these opinions, the Hon. Newton Bateman, now president of the board, presented the following resolution, which was unanimously adopted at a meeting held January 19, 1882:

Resolved, That the power of the State Board of Health, under the law creating said board, to order the vaccination of all public-school children, is clear and unquestionable. The consequent duty of boards of school directors to see that such order is strictly enforced in their respective districts is equally clear, and the said order of the Board of Health is their sufficient warrant for so doing.

Should any board of directors refuse or neglect to carry out said order, they may be proceeded against for neglect of duty; and should any such board be prosecuted for enforcing said order, they may, if

necessary, employ counsel to defend them in such suit, and pay said counsel out of any school funds of their district not otherwise specifically appropriated.

The protection of the public health from the loathsome and deadly scourge of small-pox is a paramount obligation, and nothing can, or should, or will excuse school boards or other officers or persons concerned from doing their whole duty in the premises.

The following facts concerning the operation of the School-Vaccination Order during the winter of 1881-'82 are compiled from the Fifth Annual Report of the State Board.

When the School-Vaccination Order went into effect, January 1, 1882, nearly sixty-nine per cent., or over 490,000, of the enrolled scholars in Illinois were either entirely unprotected against small-pox by vaccination, or had again become susceptible through failure to revaccinate at the proper time. Within sixty days—that is, by the 1st of March, 1882—there was less than six per cent. of unprotected and susceptible remaining among those in attendance; and the frequency of small-pox and varioloid among public-school children had been lessened more than one third, while the mortality rate of cases was reduced from 16.5 per cent. to 3.3 per cent. On the one hand the number of cases was reduced owing to the general vaccinal protection; and, on the other hand, the cases which did occur were milder and less fatal, because of the modifying effect of vaccination. The small-pox reports made to the board from all parts of the State during the four years, 1880-'83, show that the deaths among *unvaccinated* school-children were at the rate of 48 in every 100 attacked; while the deaths among *vaccinated* school-children were only in the proportion of *nine tenths of one per cent.* of those attacked. It is difficult to conceive of a stronger argument than these figures present for the necessity of a thorough enforcement of proper and successful vaccination as a prerequisite to admission to the public-school room.

Canned Foods.—John P. Hawkins, C. S., Brevet Major-General, U. S. Army, says, in the "American Grocer":

"The army posts throughout the United States have been for a long period, now nearly twenty years, supplied with canned articles, fruits, meats, vegetables, and preserves. Many of the posts are located where it is not possible to cultivate gardens, either on account of poverty of the soil, lack of rainfall, or rigor of climate, and, as a consequence, there is hardly a military station in the land where officers and soldiers and their families do not habitually use canned foods, and, as a class, army people are without doubt the largest consumers of canned articles in proportion to their number of any other in the country. While one occasionally sees an article in a newspaper telling how some one has been taken sick by reason of having eaten something from a can, yet, in all my army experience (and for many years I have been chief commissary of a military department, and, as such, had charge of supplying posts with all their subsistence), I have never known or heard of a case of canned goods poisoning in the army.

"The canned foods used are not of any particular packing either. We buy a good article, and from any packer that will furnish a proper quality, and there is considerable competition among packers to furnish us. Nor are our canned foods purchased in any particular section of the country, but usually from the packer or manufacturer who converts the crude material into the canned article, and our points of purchase extend from Maine to Texas and from the Atlantic to the Gulf. So it will be seen that our army supply is drawn from the same sources that supply the people at large, and that civilians and our army consume the same canned articles and under the same circumstances. I recently inquired of our medical director, Lieutenant-Colonel John E. Summers, surgeon, U. S. Army, a careful and skilled observer in his duties, and of large experience in his army profession, whether he had ever known of a case of poisoning in the army which might be attributed to canned goods, or whether any of his medical officers at military posts had ever reported such a case to him. To both inquiries he answered, No; he had never known or heard of such a case. As in his official capacity he has been for many years in the constant receipt of formal reports concerning the health and mortality of all the posts throughout the country, and statements as to causes operating to influence the health of every command, it would certainly follow that, if ever there was a

suspicion on the part of a medical officer that any canned food was the cause of a sickness or a disorder, there would be every probability in favor of its being reported and known to him and to the entire medical profession of the army.

"A further important fact in this connection is that soldiers often report sick to the surgeon for very trifling ailments, and, as a class, they are under more watchful scrutiny than any other class of people; and so if a case of poisoning which could justly be attributed to canned goods were ever to occur among them, even if not fatal or serious, there would be but a small chance that it would not come to the knowledge of the post surgeon. It would be almost an impossibility that he would be ignorant of the case and the causes.

"Deductions from the foregoing may be fairly made that the reports of poisoning by eating canned food are not to be believed, or are only to be believed when it may have occurred by reason of the person having eaten from a can the food in which was evidently spoiled, and so spoiled that the appearance of the can would surely have indicated the unsound condition of its contents to a person exercising ordinary care. If a person buys tainted meat from the butcher and eats it, knowing it to be a little off, and is taken sick, he must blame himself for trifling with his health; and likewise, if he buys canned food of suspicious appearance, he must expect to pay in health for his carelessness or temerity. Therefore, having no apprehension as to the method of packing an article, whether in tin or in glass, whether soldered with the aid of an acid or soldered inside or outside the can, there is every reason to consider canned articles as good for food as any food can be. The experience of our army ought to be conclusive on this subject. And no person having a decent knowledge of what is good or bad, sound or unsound, could be misled into eating an improper article from a can any easier than he could be induced in eat a decayed potato or a tainted piece of butcher's meat."

The Health of Michigan.—We have been favored by the secretary of the Michigan State Board of Health, Dr. Henry B. Baker, of Lansing, with the following statement:

"Reports by observers in different parts of the State show the diseases which caused the most sickness in Michigan during the month of August (four weeks ending August 30), 1884, as follows:

Number of weekly reports received, 205.	For preceding month.	
Diseases arranged in order of greatest area of prevalence.	Per cent. of reports stating presence of disease.	Per cent. of reports stating presence of disease.
Diarrhœa.....	88	72
Intermittent fever.....	72	73
Rheumatism.....	68	68
Neuralgia.....	60	66
Consumption of the lungs.....	60	63
Cholera morbus.....	50	39
Bronchitis.....	49	47
Dysentery.....	48	29
Remittent fever.....	44	45
Cholera infantum.....	42	27
Tonsillitis.....	35	34
Erysipelas.....	32	28
Influenza.....	30	28
Inflammation of the bowels.....	26	20
Whooping-cough.....	23	27
Typho-malarial fever.....	22	10
Inflammation of the kidney.....	20	24
Diphtheria.....	14	8
Typhoid fever.....	12	7
Scarlet fever.....	11	11
Pneumonia.....	10	15
Inflammation of the brain.....	10	9
Puerperal fever.....	9	7
Cerebro-spinal meningitis.....	8	6
Membranous croup.....	5	5
Measles.....	5	8

"For the month of August, 1884, the reports indicate that diarrhœa, cholera infantum, typho-malarial fever, cholera morbus, and dysentery increased in area of prevalence.

"Compared with the average for the month of August in the six years 1877-1882, erysipelas, rheumatism, and bronchitis were more prevalent, and remittent fever, intermittent fever, dysentery, and cholera morbus were less prevalent in August, 1884.

"For the month of August, 1884, compared with the average of corresponding months for the six years 1879-1884, the temperature was lower, the absolute and the relative humidity and the day ozone were less and the night ozone more.

"Including reports by regular observers and others, diphtheria was reported in Michigan in the month of August, 1884, at twenty-seven places—namely, Alamo, Armada, Alpena, Au Sable, Bloomfield, Birmingham, Berlin, Detroit, East Saginaw, Flint, Grand Rapids, Groveland, Holly, Ishpeming, Kalamazoo, Leland, Maple Rapids, Manistee, Monro, McBride, Northville, Oakland, Pontiac, South Haven, Summit, Vassar, and Warren; scarlet fever at twenty places—Albion, Au Sable, Armada, Bridge-town, Cadillac, Columbiaville, Clayton, Detroit, Dorr, Fairfield, Grand Rapids, Hastings, Hazleton, Ionia, Jasper, Kalamazoo, Novi, Stanton, Swartz Creek, and Sand Beach; and measles at ten places—Detroit, Grand Rapids, Grand Haven, Kalkaska, Kalamazoo, Ludington, Manistee, Muskegon, South Haven, and Whitehall."

The Ventilation of Houses was one of the many interesting subjects discussed at a sanitary convention held in Ionia, Mich., last December, the proceedings of which have been issued in the form of a supplement to the "Report of the Michigan State Board of Health." Dr. J. H. Kellogg, of Battle Creek, introduced the subject, and dwelt upon the importance of systematic provisions for renovating the air of sleeping-rooms, etc. One of the speakers was inclined to contest the necessity of such measures, and doubted if carbon dioxide could reasonably be looked upon as deleterious, except when it was present in large quantities. He added that, even regarding it as highly injurious, complicated arrangements for getting rid of it were not needed. "All you've got to do," he said, "is to cut a hole in the wall at the floor, and let the gas run out of the room." The assistant secretary of the convention, Mr. Erwin F. Smith, of Lansing, subsequently criticised this speaker's views as follows:

"The gentleman has overlooked the law of the diffusion of gases, in obedience to which law gases in contact for any length of time must become intimately mingled. This would entirely prevent any such outward flow of the carbonic acid by its own weight as the gentleman would have us believe could easily be brought about by providing an outlet into the open air at or near the floor. He has also overlooked the fact that carbonic-acid gas is not the most injurious of the products of respiration. As stated by the lecturer, the organic matter thrown off from the skin and lungs is the most harmful product of respiration. This organic waste matter, when rebreathed, acts as a direct poison upon the animal economy. It is less in quantity than the expired carbonic acid, but occurs along with that, so that when we have established the presence, from expiration, of an excess of carbonic acid in any room, we have at the same time proved that a more deadly, if not so easily detected, enemy is also present. This organic waste matter rises with the warm expired air to the ceiling, whence, as it cools, it is gradually diffused downward. Those who have carefully examined our poorly ventilated State prisons have repeatedly had demonstrated to them by the sense of smell, if not otherwise, that the upper layer of air in a room occupied by large bodies of men becomes soonest charged with foul emanations. In sleeping-wards, where cells rise above each other in from three to five tiers, the impurity of the air, as shown by the sense of smell and general feeling of oppressiveness, increases as one ascends from one gallery to another, until, toward morning, on the uppermost gallery near the ceiling, the stench and oppressiveness of the air become almost intolerable; and this, too, in spite of the fact that in the State House of Correction, at Ionia, numerous openings have been provided in the outer walls near the floor for the express purpose of ventilation. It is also true, as I know by observation, that prisoners who sleep in ranges of cells near the ceiling complain more of headache, have less appetite, and eat considerably less food than those sleeping in cells near the floor. From these considerations I think it is apparent that a room can not be properly ventilated by simply making an out-door opening at or near the floor."

STUDENTS' NUMBER.

THE MEDICAL SCHOOLS

OF THE

UNITED STATES AND CANADA.

Herewith we give as much information as our space will allow concerning the non-sectarian medical schools of the United States and Canada. The arrangement is by States, in alphabetical order, and the different colleges in individual States are mentioned in the order of their age. In many instances more particulars might have been given with advantage, but, as lack of space has precluded our following this course, we have been careful to give, so far as we have been able to ascertain them, the names and addresses of the deans or other officers to whom application for further information may be made.

It affords us pleasure to acknowledge the kindness of college officials in providing us with data for this issue.

Alabama.

MEDICAL COLLEGE OF ALABAMA,

MOBILE.

We have not received the announcement for the session of 1884-'85.

FACULTY.—F. A. ROSS, M. D., *Materia Medica* and *Therapeutics* (emeritus); E. P. GAINES, M. D., *Physical Diagnosis* and *Diseases of the Chest*; GEORGE A. KETCHUM, M. D., *Theory and Practice of Medicine*; E. H. FOURNIER, M. D., *Materia Medica, Therapeutics, and Clinical Medicine*; W. H. ANDERSON, M. D. (Dean), *Physiology*; J. F. HEUSTIS, M. D., *Surgery*; CHARLES MOHR, Jr., *Lecturer on Chemistry*; GORONWY OWEN, M. D., *Obstetrics and Diseases of Women and Children*; CALEB TOXEY, M. D., *Anatomy*; W. H. SANDERS, M. D., *Diseases of the Eye and Ear, and Histology*; RHETT GOODE, M. D., *Lecturer on Clinical and Minor Surgery*; P. C. CANDIDUS, G. P., *Lecturer on Practical Pharmacy*; D. E. SMITH, M. D. (Adjunct), *Surgery*; E. W. AUZAL, M. D. (Adjunct), *Physiology*; W. B. PAPE, M. D. (Adjunct), *Obstetrics, etc.*; RHETT GOODE, M. D., *Demonstrator of Anatomy*; E. DICKSON, M. D., *Assistant Demonstrator*.

FEES.—Matriculation, \$5; lectures, both at college and hospital, \$75; dissecting, \$10; graduation, \$25. All students are required to take the dissecting ticket.

For further information address W. H. Anderson, M. D., Dean, No. 70 St. Francis Street, Mobile, Ala.

Arkansas.

MEDICAL DEPARTMENT OF

ARKANSAS INDUSTRIAL UNIVERSITY,

LITTLE ROCK.

FACULTY.—P. O. HOOPER, M. D. (President), *Practice of Medicine*; EDWIN BENTLEY, M. D., *Institutes and Practice of Surgery*; A. L. BREYSACHER, M. D., *Obstetrics and Diseases of Women and Children*; J. A. DIBRELL, Jr., M. D.,

Anatomy; JOHN J. McALMONT, M. D., *Materia Medica, Therapeutics, Hygiene, and Botany*; JAMES H. SOUTHALL, M. D., *Institutes of Medicine*; ROSCOE G. JENNINGS, M. D., *Clinical Surgery and Dermatology*; J. M. BOND, M. D., *Medical Chemistry and Toxicology*; L. P. GIBSON, M. D., *Demonstrator of Anatomy*; T. E. MURRELL, M. D., *Ophthalmology and Otology*; JAMES H. LENOW, M. D., *Diseases of the Genito-urinary Organs*; CLAIBORNE WATKINS, M. D., *Physical Diagnosis and Clinical Medicine*; LOUIS R. STARK, M. D., *Gynecology*; JOHN WATERS, M. D., *Clinical Medicine and Prosector of Anatomy*; LOUIS AUGSPATH, D. D. S., *Oral Surgery*; W. U. SIMONS, U. S. Signal Service, *Meteorology, etc.*

There is a voluntary three years' graded course.

FEES.—Professors' tickets, \$50; matriculation, \$5; demonstrator's ticket, \$5; hospital ticket, \$3; graduation, \$25.

Address R. G. Jennings, M. D., Secretary, Little Rock, Ark.

California.

COOPER MEDICAL COLLEGE,

SAN FRANCISCO.

This college is the successor to the Medical College of the Pacific.

FACULTY.—HENRY GIBBONS, M. D., *Principles and Practice of Medicine*; L. C. LANE, M. D. (President), *Surgery*; C. N. ELLINWOOD, M. D., *Physiology*; ADOLPH BARKAN, M. D., *Ophthalmology and Otology*; J. H. WYTHE, M. D., *Microscopy and Histology*; HENRY GIBBONS, Jr., M. D. (Dean), *Obstetrics and Diseases of Women and Children*; WILLIAM A. DOUGLASS, M. D., *Clinical Surgery*; J. O. HIRSCHFELDER, M. D., *Clinical Medicine*; CLINTON CUSHING, M. D., *Gynecology*; W. D. JOHNSTON, M. D., *Chemistry and Toxicology*; R. H. PLUMMER, M. D., *Anatomy*; C. H. STEELE, M. D., *Materia Medica and Therapeutics*; JOHN F. MORSE, M. D. (Adjunct), *Anatomy*; W. S. WHITWELL, M. D. (Adjunct), *Obstetrics*; CHARLES E. FARNUM, M. D., *Demonstrator of Anatomy*.

The regular course begins in June of each year, and terminates in October. The intermediate course begins in January, and continues until the 1st of May.

FEES.—Matriculation, \$5; lectures, \$130; Demonstrator's ticket, \$10; graduation, \$40.

Further information may be obtained from Henry Gibbons, Jr., M. D., Dean, 101 Dupont Street, San Francisco, Cal.

Canada.

The possession of an M. D. degree does not entitle the holder to practice in Canada. He must become registered. In all the provinces of the Dominion except Ontario the possession of a degree in medicine from a recognized university entitles the holder to register. In Quebec, graduates of the universities of the province must appear in person at the May or September meeting of the board, present their diplomas and swear to them. Registration is granted only at these periods. It is optional with the board whether the holder of a degree from a university outside the province of

Quebec can register without further examination. In some cases the additional test has been enforced. In *Ontario*, all but registered practitioners of Great Britain must pass the examination of the College of Physicians and Surgeons of the Province before registration. The examination is held every spring. In *Nova Scotia*, *New Brunswick*, and *Manitoba*, the provincial boards accept the degrees of Canadian universities without examination. *Prince Edward Island* and *British Columbia* have as yet no medical boards.

A graduate in medicine of an American college, in order to register in any of the Provinces of the Dominion, must (a), unless the holder of an academical degree, pass the matriculation examination of the board, (b) attend some one of the medical schools in order to complete the curriculum required by the boards, and (c) pass the professional examination.

MCGILL UNIVERSITY, FACULTY OF MEDICINE,

MONTREAL.

FACULTY.—JOHN WILLIAM DAWSON, LL. D., F. R. S. (Principal), Natural History; WILLIAM WRIGHT, M. D., *Materia Medica* and Therapeutics (emeritus); DUNCAN C. MCCALLUM, M. D., Midwifery and Diseases of Women (emeritus); ROBERT CRAIK, M. D. (Treasurer), Chemistry (emeritus); JOSEPH MORLEY DRAKE, M. D., Institutes of Medicine (emeritus); R. PALMER HOWARD, M. D. (Dean), Medicine; G. E. FENWICK, M. D., Surgery; G. P. GIRDWOOD, M. D., Chemistry; GEORGE ROSS, M. A., M. D., Clinical Medicine; WILLIAM OSLER, M. D. (Registrar), Professor of the Institutes of Medicine; THOMAS G. RODDICK, M. D., Clinical Surgery; WILLIAM GARDNER, M. D., Gynecology; FRANCIS J. SHEPHERD, M. D., Anatomy; FRANK BULLER, M. D., Ophthalmology and Otolaryngology; ARTHUR A. BROWNE, B. A., M. D., Midwifery and Diseases of Infancy; JAMES STEWART, M. D., *Materia Medica* and Therapeutics; GEORGE WILKINS, M. D., Medical Jurisprudence; D. P. PENHALLOW, B. Sc., Botany; R. L. MACDONNELL, B. A., M. D., Demonstrator of Anatomy and Lecturer on Hygiene; WILLIAM R. SUTHERLAND, M. D., Assistant Demonstrator and Curator; GEORGE W. MAJOR, B. A., M. D., Instructor in Laryngology; ALEXANDER D. BLACKADER, B. A., M. D., Instructor in Diseases of Children; T. WESLEY MILLS, M. A., M. D., Demonstrator of Practical Physiology and Histology; ROBERT J. B. HOWARD, B. A., M. D., Assistant Demonstrator of Anatomy.

The fifty-second annual session opened October 1, 1884, and will last six months. Students from the United States must pass the university matriculation examination.

REQUIREMENTS FOR GRADUATION.—Attendance on four six months' sessions in this or some other recognized school, or four years' study, including three such courses; eighteen months of attendance at a hospital approved of by the university; six months' practice in pharmacy; three months' attendance at an approved lying-in hospital, including the care of six cases of labor. The other requirements are substantially the same as in the larger colleges of the United States.

FEES.—First year, \$67; second year, \$92; third year,

\$87; fourth year, \$65; hospital fees, \$28; graduation, \$30; university matriculation, \$5.

For further information address Dr. William Osler, Registrar of the Faculty, 1353 St. Catherine Street, Montreal. See also the Students' Number of the "New York Medical Journal" for 1883.

TORONTO SCHOOL OF MEDICINE

(AFFILIATED WITH THE UNIVERSITY OF TORONTO AND THE UNIVERSITY OF VICTORIA COLLEGE).

We have not received the announcement for the session of 1884-'85. Last year the faculty was as follows:

FACULTY.—W. T. AIKENS, M. D., LL. D., Principles and Practice of Surgery and Clinical Surgery; H. H. WRIGHT, M. D., L. C. P. & S., U. C. (Secretary), Principles and Practice of Medicine and Clinical Medicine; J. H. RICHARDSON, M. D., M. R. C. S. Eng., Descriptive Anatomy; UZZIEL OGDEN, M. D., Midwifery and Diseases of Women and Children; JAMES THORBURN, M. D., Edin. and Toronto Univ., *Materia Medica* and Therapeutics; M. BARRETT, M. D., Physiology; W. W. OGDEN, M. B., Midwifery (adjunct) and Medical Jurisprudence and Toxicology; M. H. AIKENS, M. B., M. R. C. S. Eng., Surgery (adjunct) and Primary Anatomy; W. OLDRIGHT, M. D., Medical Jurisprudence (adjunct) and Sanitary Science; L. MCFARLANE, M. B., Anatomy (adjunct) and Demonstrator of Anatomy; GEORGE WRIGHT, M. B., *Materia Medica* and Therapeutics (adjunct); J. E. GRAHAM, M. D., L. R. C. P. Lond., Practice of Medicine (adjunct) and Clinical Medicine and Dermatology and Pathology; R. A. REEVE, M. D., Diseases of the Eye and Ear; THOMAS HEYS, Chemistry; HENRY MONTGOMERY, B. Sc., Botany and Zoology; A. H. WRIGHT, M. B., M. R. C. S. Eng., Demonstrator of Normal Histology; JOHN FERGUSON, M. B., L. F. P. S. Glasgow, Assistant Demonstrator of Anatomy.

Address Dr. H. H. Wright, Secretary, corner of Sherbourne and Gerrard Streets, Toronto.

ROYAL COLLEGE OF PHYSICIANS AND SURGEONS

(MEDICAL DEPARTMENT OF QUEEN'S UNIVERSITY),

KINGSTON.

Not having received this year's announcement, we reproduce the following from our Students' Number for 1883:

FACULTY.—FIFE FOWLER, M. D., L. R. C. S. Edin. (President), Theory and Practice of Medicine; MICHAEL LAVELL, M. D. (Registrar), Obstetrics and Gynecology; MICHAEL SULLIVAN, M. D., Principles of Practice and Surgery; ALFRED S. OLIVER, M. D., *Materia Medica*, Therapeutics, and Pharmacy; THOMAS R. DUPUIS, M. D., F. R. C. P. S., K., and M. R. C. S. Eng., Descriptive Anatomy; THE PROFESSORS OF CHEMISTRY AND BOTANY IN QUEEN'S UNIVERSITY, Chemistry, Practical Chemistry, and Botany; KENNETH N. FENWICK, M. D., M. R. C. S. E., Institutes of Medicine; CHAMBERLEN A. IRWIN, M. D., Medical Jurisprudence; C. H. LAYELLE, M. D., L. R. C. P. S. K., Ophthalmic and Aural Surgery and Practical Anatomy; H. J. SAUNDERS, M. D.,

M. R. C. S. E., Clinical Surgery; JAMES MCCAMMON, M. D., M. R. C. S. E., Clinical Medicine; W. H. HENDERSON, M. D., M. R. C. S. E., Histology; ———, Sanitary Science; JOHN HERALD, M. A., and EDGAR FORRESTER, M. A., Associate Demonstrators of Anatomy.

FEES.—Registration, \$5; the different courses \$4 to \$12; each examination, \$10.

HALIFAX MEDICAL COLLEGE

(MEDICAL DEPARTMENT OF THE UNIVERSITY OF HALIFAX).

THE announcement for the session of 1884-'85 has not reached us. The following appeared in our Students' Number for 1883:

FACULTY.—R. S. BLACK, M. D., L. R. C. S. Edin. (President), Obstetrics (emeritus); ALEX. P. REID, M. D. (Dean), L. R. C. S. Edin., L. C. P. & S. Canada; ARCHIBALD LAWSON, M. D., M. R. C. S. England, Principles and Practice of Medicine and Clinical Medicine; WM. B. SLAYTER, M. D., M. R. C. S. L., F. O. S. London, L. R. C. P. England, Obstetrics and Diseases of Women and Children; EDWARD FARRELL, M. D., Principles and Practice of Surgery and Clinical Surgery; JOHN F. BLACK, M. D., *Materia Medica* and Therapeutics and Clinical Surgery; JOHN SOMERS, M. D., F. R. M. S., Physiology; GEORGE L. SINCLAIR, M. D., New York, M. D. Univ. Halifax, Anatomy; D. A. CAMPBELL, M. D., C. M. (Adjunct), Anatomy; H. McD. HENRY, LL.B., Medical Jurisprudence.

Lecturers.—E. JENNINGS, M. D., Dermatology; T. R. ALMON, M. D., Diseases of Children; D. DEW. HARRINGTON, M. D., Medical Jurisprudence; W. TOBIN, F. R. C. S. Ireland, Ophthalmology and Otology.

Instructors.—MR. W. H. WADDELL, Practical Chemistry; A. W. H. LINDSAY, M. D., M. B. Edin., Microscopy; C. E. PUTTNER, Ph. M., Practical Pharmacy; DR. CAMPBELL and DR. LINDSAY, Demonstrators of Anatomy.

FEES.—Medical jurisprudence, practical chemistry, practical pharmacy, microscopy, and botany tickets, \$6 each; practical anatomy ticket, \$8; other tickets, \$12 each; registration, \$2 (perpetual, \$5). Address F. J. Black, M. D., Registrar, 49 Granville Street, Halifax, N. S.

FACULTY OF MEDICINE,

UNIVERSITY OF BISHOP'S COLLEGE,

MONTREAL.

FACULTY.—F. W. CAMPBELL, M. D., L. R. C. P. Lond. (Dean), Principles and Practice of Medicine; J. B. EDWARDS, Ph. D., D. C. L., Practical Chemistry (emeritus); R. A. KENNEDY, M. D., C. M., Obstetrics and Diseases of Children; J. PERRIGO, M. D., C. M., M. R. C. S. Eng., Surgery; J. B. MCCONNELL, M. D., C. M., *Materia Medica*; CASEY A. WOOD, C. M., M. D., Pathology; GEORGE E. ARMSTRONG, M. D., Physiology; JAMES C. CAMERON, M. D., C. M., M. R. C. P. I. (Registrar), Medical Jurisprudence; THOMAS SIMPSON, M. D., Hygiene; E. H. TRENHOLME, M. D., C. M., B. C. L., Gynaecology; J. T. DONALD, M. A., F. C. S., Chemistry; H. L. REDDY, M. D., L. R. C. S. E., L. R. C. P. L.,

Medical Jurisprudence; A. LAPHORN SMITH, M. D., M. R. C. S. Eng., Botany; JOSEPH BEMROSE, F. C. S., Lecturer on Practical Chemistry; ALEXANDER PROUDFOOT, M. D., C. M., Lecturer on Diseases of the Eye, Ear, and Throat; D. D. GAHERTY, C. M., M. D., Anatomy; J. LESLIE FOLEY, C. M., M. D., Curator.

The fourteenth session began October 1, 1884, and will continue until the end of March, 1885. A preliminary examination is required.

FEES.—Separate tickets, \$6 and \$12; practical chemistry, \$12; practical anatomy, \$6; practical histology, \$16; enregistration, \$2; hospital tickets and clinical lectures, \$8 to \$12. The foregoing are for one course. Graduation, \$20.

For further information address Dr. F. W. Campbell, Dean, 10 Phillips Place, Beaver Hall.

TRINITY MEDICAL SCHOOL

(IN AFFILIATION WITH THE UNIVERSITY OF TRINITY COLLEGE, THE UNIVERSITY OF TORONTO, AND THE UNIVERSITY OF MANITOBA),

TORONTO.

FACULTY.—WALTER B. GEIKIE, M. D., C. M., F. R. C. S. E., L. R. C. P. Lond. (Dean), Principles and Practice of Medicine and Clinical Medicine; J. FULTON, M. D., C. M., M. R. C. S. Eng., L. R. C. P. Lond., Principles and Practice of Surgery and Clinical Surgery; J. E. KENNEDY, M. D., *Materia Medica* and Therapeutics; H. ROBERTSON, M. B., M. R. C. S. Eng., Anatomy; J. ALGERNON TEMPLE, M. D., C. M., M. R. C. S. Eng., Obstetrics and Diseases of Women and Children; THOMAS KIRKLAND, General Chemistry and Botany; C. W. COVERNTON, M. D., C. M., M. R. C. S. Eng., Sanitary Science; FRED. LE M. GRASETT, M. B., C. M. Edin. Univ., F. R. C. S. Eng., M. R. C. S. Eng., Medical Jurisprudence; W. T. STUART, M. D., C. M., Practical Chemistry; CHARLES SHEARD, M. D., C. M., M. R. C. S. Eng., Physiology and Histology, Normal and Pathological; GEORGE S. RYERSON, M. D., L. R. C. P., L. R. C. S. Eng., Ophthalmology, Otology, and Laryngology; LUKE TESKEY, M. D., C. M., M. R. C. S. Eng., Demonstrator of Anatomy; G. A. BINGHAM, M. D., C. M., M. B., Assistant Demonstrator.

The winter session began October 1st, and will continue six months.

Address Dr. Walter B. Geikie, Dean, 324 Jarvis Street, Toronto.

FACULTY OF MEDICINE OF

LAVAL UNIVERSITY,

MONTREAL.

FACULTY.—J. P. ROTTOT, M. D., Medicine and Clinical Medicine; E. P. LACHAPELLE, M. D. (Secretary), Physiology and General Pathology; A. LAMARCHE, M. D., Descriptive Anatomy; A. RICARD, M. D., *Materia Medica*; A. DAGENAIS, M. D., Obstetrics; J. A. LARAMÉE, M. D., Clinical Medicine; A. T. BROUSSEAU, M. D., Surgical Pathology and Clinical Surgery; C. M. FILIATRAULT, M. D., Medical Jurisprudence; N. FAFARD, M. D., Clinical Surgery (also Chemistry *ad interim*); E. BERTHELOT, M. D., Practical Anatomy; S. LACHAPELLE, M. D., Hygiene; H. E. DESROSNIERS, M. D.,

Toxicology; S. DUVAL, Diseases of Children (clinical—also Botany *ad interim*); A. A. FOUCHER, Diseases of the Eye and Ear; A. BRODEUR, M. D., Histology and Operative Surgery.

Address Dr. E. P. Lachapelle, Secretary, 132 rue St. Laurent, Montreal.

Colorado.

MEDICAL DEPARTMENT OF THE UNIVERSITY OF DENVER.

FACULTY.—H. K. STEELE, M. D. (Dean), Principles and Practice of Surgery and Clinical Surgery; F. J. BANCROFT, M. D., Clinical Surgery—Fractures and Dislocations; J. C. DAVIS, M. D., Operative Surgery and Surgical Pathology; H. A. LEMEN, M. D., Principles and Practice of Medicine and Clinical Medicine; C. M. PARKER, M. D., Clinical Medicine—Fevers and General Diseases; W. H. WILLIAMS, M. D., Diseases of Women and Children; A. STEDMAN, M. D., Obstetrics and Puerperal Diseases; CHARLES DENISON, M. D., Diseases of the Chest and Climatology; S. A. BONESTEEL, C. M., M. D., Descriptive and Surgical Anatomy; S. A. FISK, M. D., Descriptive and Topographical Anatomy; W. E. WILSON, M. D., *Materia Medica* and Therapeutics; J. H. KIMBALL, M. D. (Secretary), Physiology and Diseases of the Mind and Nervous System; J. W. GRAHAM, M. D., Medical Jurisprudence; W. P. HEADDEN, Ph.D., Chemistry; E. C. RIVERS, M. D., Lecturer on Ophthalmology; H. H. HOWLAND, M. D., Lecturer on Laryngoscopy and Rhinoscopy; L. T. DUBIN, M. D., Demonstrator of Anatomy.

The fourth annual session began October 1, 1884, and will close on the last Wednesday in March, 1885.

FEES.—Matriculation, \$5; lecture course, \$5; laboratory fees, \$15; dissection, \$5; graduation, \$30.

Address Professor H. K. Steele, Dean, Denver, Col.

Connecticut.

MEDICAL DEPARTMENT OF YALE COLLEGE,

NEW HAVEN.

We have not received the announcement for the session of 1884-'85. Last year the faculty was as follows:

FACULTY.—BENJAMIN SILLIMAN, M. D., Chemistry; MOSES C. WHITE, M. D., Pathology; C. A. LINDSLEY, M. D. (Dean), Theory and Practice of Medicine; LEONARD J. SANFORD, M. D., Anatomy; WILLIAM H. CARMALT, M. D., Surgery; JAMES K. THACHER, M. D., Physiology; T. H. RUSSELL, M. D., *Materia Medica* and Therapeutics; FRANK E. BECKWITH, M. D., Obstetrics and Diseases of Women and Children.

Lecturers.—WILLIAM O. AYRES, M. D., Nervous Diseases; HENRY P. STEARNS, M. D., Insanity; S. HARTWELL CHAPMAN, M. D., Diseases of the Throat and Ear; SAMUEL B. ST. JOHN, M. D., Ophthalmology; WILLIAM H. HOTCHKISS, M. D., Demonstrator of Anatomy; T. MITCHELL PRUDEN, M. D., Normal Histology; HENRY FLEISCHNER, M. D., Dermatology; HERBERT E. SMITH, M. D., Chemistry.

The system of instruction embraces a three years' graded

course. A preliminary examination is required of those who have not a degree in letters or science from a recognized institution, or have not passed the examination for admission to Yale College.

FEES.—Matriculation, \$5; each year's tuition, \$125; graduation, \$30.

Address Professor C. A. Lindsley, Dean.

District of Columbia.

NATIONAL MEDICAL COLLEGE

(MEDICAL DEPARTMENT OF COLUMBIAN UNIVERSITY),

WASHINGTON.

FACULTY.—A. Y. P. GARNETT, M. D. (President), Clinical Medicine (emeritus); GRAFTON TYLER, M. D., Theory and Practice of Medicine (emeritus); N. S. LINCOLN, M. D., Surgery (emeritus); J. FORD THOMPSON, M. D., Surgery; W. W. JOHNSTON, M. D., Theory and Practice of Medicine; A. F. A. KING, M. D. (Dean), Obstetrics and the Diseases of Women and Children; EDWARD T. FRISTOE, LL. D., Chemistry and Toxicology; WILLIAM LEE, M. D., Physiology; ELLIOTT COUES, M. D., Ph. D., Anatomy; D. WEBSTER PRENTISS, M. D., *Materia Medica* and Therapeutics; A. C. ADAMS, M. D., Demonstrator of Anatomy; G. N. ACKER, M. D., Demonstrator of Practical Physiology and Pathological Histology; BENJAMIN G. POOLE, M. D., Assistant Demonstrator of Anatomy and Prosector in Anatomy; W. P. LAWVER, M. D., Demonstrator of Practical Chemistry.

The sixty-third course will begin October 6, 1884, and continue until March 1, 1885. Three graded courses are required.

FEES.—Full course of lectures, \$100; single tickets, \$15; practical anatomy, \$10; matriculation, \$5; examination fee, primary branches, \$20; examination fee, final branches, \$10.

Address A. F. A. King, M. D., Dean, 726 Thirteenth Street, Washington, D. C.

MEDICAL DEPARTMENT OF THE UNIVERSITY OF GEORGETOWN.

FACULTY.—FLDOARDO HOWARD, M. D. (emeritus), Obstetrics and Diseases of Women and Infants; JAMES E. MORGAN, M. D. (emeritus), *Materia Medica*, Therapeutics, and Medical Jurisprudence; THOMAS ANTISEL, M. D. (emeritus), Chemistry and Toxicology; SAMUEL C. BUSEY, M. D. (emeritus), Theory and Practice of Medicine and Clinical Medicine; JOSEPH TABER JOHNSON, M. D. (President), Obstetrics and Diseases of Women; CARL H. A. KLEINSCHMIDT, M. D., Physiology; JOHN B. HAMILTON, Surgery; J. W. H. LOVEJOY, M. D. (Dean), Theory and Practice of Medicine; M. G. ELLZEY, M. D., Chemistry and State Medicine; FRANK BAKER, M. D., Anatomy; G. L. MAGRUDER, M. D., *Materia Medica* and Therapeutics; SWAN M. BURNETT, M. D., Ophthalmology and Otology (clinical); ETHELBERT C. MORGAN, M. D., Laryngology (clinical); LOUIS KOLIPINSKI, M. D., Demonstrator of Anatomy, and Curator.

The thirty-sixth regular course began Monday, September 22, 1884, and will continue until April 25, 1885.

FEES.—Lectures, \$100; matriculation, \$5; demonstration, \$10.

For further information apply to J. W. H. Lovejoy, M. D., Dean, No. 900 Twelfth Street, N. W., Washington, D. C.

MEDICAL DEPARTMENT OF HOWARD UNIVERSITY,

WASHINGTON.

THE announcement for the session of 1884-'85 has not been received. Last year the faculty was as follows:

FACULTY.—THOMAS B. HOOD, M. D. (Dean), Principles and Practice of Medicine; CHARLES B. PURVIS, M. D. (Secretary), Obstetrics and Diseases of Women and Children; NIEL F. GRAHAM, M. D., Principles and Practice of Surgery; DANIEL S. LAMB, M. D., Descriptive and Surgical Anatomy; WILLIAM H. SEAMAN, M. D., Chemistry; JOHN E. BRACKETT, M. D., Materia Medica and Therapeutics; ROBERT REYBURN, M. D., Physiology and Medical Jurisprudence; N. WHITCOMB, D. D. S., Dental Surgery and Operative Dentistry; ———, D. D. S., Dental Mechanism and Metallurgy; CLARENCE R. DUFOUR, Ph. D., Pharmacy and Botany; E. A. BALLOCH, M. D., Demonstrator of Anatomy; M. G. JENSON, M. D., D. D. S., Demonstrator in Dentistry.

This college is open to all without regard to sex or race.

FEES.—Matriculation, \$10; dissection, \$5; incidental expenses, \$20; graduation, \$30.

Address Charles B. Purvis, M. D., Secretary, No. 1118 Thirteenth Street, N. W., Washington, D. C.

MEDICAL DEPARTMENT OF THE NATIONAL UNIVERSITY,

WASHINGTON.

THE first regular course begins October 6, 1884, and continues until the last Thursday in April.

FACULTY.—J. T. WINTER, M. D. (President), Materia Medica and Therapeutics; H. H. BARKER, M. D. (Dean), Obstetrics and Diseases of Women and Children; T. E. McARDLE, M. D., Surgery; S. S. ADAMS, M. D., Theory and Practice of Medicine; G. W. COOK, M. D., Physiology; G. W. WEST, M. D., Anatomy; J. MORRISON, M. D., Ph. D., F. R. A. S., Chemistry and Toxicology.

Evidence of a preliminary education is required, and the course is graded.

FEES.—Lectures, \$100; demonstrator, \$10; matriculation, \$5.

Address H. H. Barker, M. D., Dean, 1116 H Street, Washington, D. C.

Georgia.

MEDICAL DEPARTMENT OF THE UNIVERSITY OF GEORGIA,

AUGUSTA.

FACULTY.—L. A. DUGAS, M. D., LL. D., Surgery (emeritus); JOSEPH A. EVE, M. D., Obstetrics and Diseases of

Women and Children; G. W. RAINS, M. D., LL. D., Medical Chemistry and Pharmacy; HENRY F. CAMPBELL, M. D., Surgery and Gynecology; DE SAUSSURE FORD, M. D., Anatomy and Operative Surgery; EDWARD GEDDINGS, M. D. (Dean), Physiology and Pathology; R. C. EVE, M. D., Practice of Medicine; G. C. DUGAS, M. D., Materia Medica and Medical Jurisprudence; T. R. WRIGHT, M. D., Demonstrator of Anatomy; W. H. DOUGHTY, JR., M. D., Assistant Demonstrator.

There is an optional graded course. The session extends from the first Monday in November to the 1st of March.

FEES.—Lectures, \$75; matriculation, \$5; demonstrator, \$10; graduation, \$30. Two beneficiary students are admitted from each congressional district of the State.

ATLANTA MEDICAL COLLEGE,

ATLANTA.

FACULTY.—A. W. GRIGGS, M. D., Practice (emeritus); W. F. WESTMORELAND, M. D., Principles and Practice of Surgery; W. ABRAM LOVE, M. D., Physiology; V. H. TALIAFERRO, M. D., Obstetrics and Diseases of Women and Children; A. W. CALHOUN, M. D., Diseases of the Eye, Ear, and Throat; J. H. LOGAN, M. D., Chemistry; H. V. M. MILLER, M. D., LL. D. (Dean), Principles and Practice of Medicine, Lecturer on Clinical Medicine; W. S. ARMSTRONG, M. D., Anatomy, Lecturer on Clinical Medicine; J. S. TODD, M. D., Materia Medica and Therapeutics, Lecturer on Clinical Medicine; JAMES A. GRAY, M. D. (Proctor), Lecturer on Venereal Diseases; D. H. HOWELL, M. D., Lecturer on Minor Surgery; C. F. BENSON, JR., M. D., Demonstrator of Anatomy; R. O. COTTER, M. D., Assistant in Eye, Ear, and Throat Diseases.

The twenty-seventh annual course of lectures will begin on the 9th of October, 1884, and close on the 1st of March, 1885. There is an optional graded course.

FEES.—Full course, \$75; practical anatomy, \$10; matriculation, \$5; graduation, \$30. Gratuitous tickets (not including matriculation, practical anatomy, or graduation), will be issued to one student from each congressional district of the State.

For further information address James A. Gray, M. D., Proctor, Atlanta, Ga.

SOUTHERN MEDICAL COLLEGE,

ATLANTA.

Nor having received the announcement for the session of 1884-'85, we publish the following from our Students' Number for 1883:

FACULTY.—W. G. OWEN, M. D., Principles and Practice of Medicine (emeritus); T. S. POWELL, M. D., Obstetrics and Diseases of Women and Children, and Lecturer on Medical Ethics; R. C. WORD, M. D., Physiology and Lecturer on Hygiene; G. G. CRAWFORD, M. D., Operative and Clinical Surgery; W. PERRIN NICOLSON, M. D. (Dean), Descriptive and Special Anatomy; JOHN T. JOHNSON, M. D., Principles and Practice of Surgery; G. G. ROY, M. D., Materia Medica and Therapeutics, and Lecturer on Toxicology;

A. G. HOBBS, M. D., Diseases of the Eye, Ear, and Throat; W. D. BIZZELL, M. D., Principles and Practice of Medicine; J. A. BURNS, Chemistry.

FEES.—Matriculation, \$5; full course, \$75; demonstrator's fee, \$10; graduation, \$30.

For further information address W. Perrin Nicolson, M. D., Dean, P. O. Box 234, Atlanta, Ga.

Illinois.

RUSH MEDICAL COLLEGE,

CHICAGO.

THE announcement for the session of 1884-'85 has not been received. The following appeared in our Students' Number for 1883:

FACULTY.—J. ADAMS ALLEN, M. D., LL. D. (President), Principles and Practice of Medicine; DeLASKIE MILLER, Ph. D., M. D., Obstetrics and Diseases of Children; MOSES GUNN, M. D., LL. D., Principles and Practice of Surgery and Clinical Surgery; JOSEPH P. ROSS, M. D., Clinical Medicine and Diseases of the Chest; WILLIAM H. BYFORD, M. D., Gynecology; EDWARD L. HOLMES, M. D., Diseases of the Eye and Ear; HENRY M. LYMAN, M. D., Physiology and Diseases of the Nervous System; JAMES H. ETHERIDGE, M. D. (Secretary), Materia Medica and Medical Jurisprudence; CHARLES T. PARKES, M. D., Anatomy; WALTER S. HAINEs, M. D., Chemistry, Pharmacy, and Toxicology; JAMES NEVINS HYDE, M. D., Skin and Venereal Diseases; NORMAN BRIDGE, M. D., Hygiene and (Adjunct) Principles and Practice of Medicine.

A gradation of study is recommended and provided for, and those graduated after a three years' course receive a certificate of honor. Instruction in dentistry is included in the curriculum.

FEES.—Matriculation (annual), \$5; course of lectures, \$75; dissection, \$5; practical chemistry, \$5; final examination, \$30. Anatomical and chemical material "at cost price."

Address Professor James H. Etheridge, Secretary, 1634 Michigan Avenue, Chicago.

COLLEGE OF PHYSICIANS AND SURGEONS,

OF CHICAGO.

WE have received no announcement for the session of 1884-'85. The following appeared in our Students' Number for last year:

FACULTY.—A. REEVES JACKSON, M. D., Surgical Diseases of Women and Clinical Gynecology; SAMUEL A. McWILLIAMS, M. D., Clinical Medicine, Diseases of the Chest, and Physical Diagnosis; DANIEL A. K. STEELE, M. D., Orthopædic Surgery; LEONARD ST. JOHN, M. D., Demonstrations of Surgery and Surgical Appliances; CHARLES WARRINGTON EARLE, M. D., Obstetrics; HENRY PALMER, M. D., Operative Surgery, Clinical Surgery, and Surgical Pathology; R. L. REA, M. D., Principles and Practice of Surgery and Clinical Surgery; FRANK E. WAXHAM, M. D., Diseases of Children; JOHN E. HARPER, M. D., Ophthalmology and Clinical Diseases of the Eye; W. E. QUINE,

M. D., Practice of Medicine; J. J. M. ANGEAR, M. D., Principles of Medicine; A. W. HARLAN, D. D. S., Dental Surgery; W. A. YOHAN, M. D., Inorganic Chemistry; ALBERT E. HOADLEY, M. D., Descriptive Anatomy; PINCKNEY FRENCH, M. D., Surgical Anatomy; F. B. EISENBOCKIUS, M. D., LL. B., Medical Jurisprudence; C. C. P. SILVA, M. D., Therapeutics; OSCAR A. KING, M. D., Diseases of the Mind and Nervous System; ROMAINE J. CURTISS, M. D., State Medicine and Hygiene; E. E. HOLROYD, M. D., Physiology; W. K. HARRISON, M. D., Medical Chemistry; J. T. JELKS, M. D., Surgical Diseases of the Genito-urinary System; R. U. HALL, M. D., Demonstrator of Anatomy.

Lecturers.—E. P. MURDOCK, M. D., Gynecology; L. H. BURNETT, M. D., Surgical Anatomy; H. P. NEWMAN, M. D., Obstetrics; BOERNE BETTMAN, M. D., Ophthalmology and Otology; JAMES HUGHES LETCHER, M. D., Principles and Practice of Surgery; G. FRANK LYDSTON, M. D., Genito-urinary Diseases; JAMES G. REID, D. D. S., Dental Anatomy and Physiology; C. B. GIBSON, Demonstrator of Inorganic Chemistry.

FEES.—Matriculation (paid annually), \$5; lectures, \$50; dissecting ticket, \$10; graduation, \$30.

Address D. A. K. STEELE, M. D., Secretary, 1801 State Street, Chicago, Ill.

WOMAN'S MEDICAL COLLEGE,

OF CHICAGO.

THIS year's announcement not having been received, we reublish the following from our Students' Number for last year:

FACULTY.—W. GODFREY DYAS, M. D., F. R. C. S., Theory and Practice of Medicine (emeritus); G. C. PAOLI, M. D., Materia Medica and Therapeutics (emeritus); T. DAVIS FITCH, M. D., Gynecology (emeritus); WILLIAM H. BYFORD, M. D. (President), Gynecology; CHARLES WARRINGTON EARLE, M. D. (Treasurer), Diseases of Children and Clinical Medicine; ISAAC N. DANFORTH, M. D., Pathology and Renal Diseases; HENRY M. LYMAN, M. D., Theory and Practice of Medicine; DANIEL R. BROWER, M. D., Diseases of the Nervous System, Medical Jurisprudence, and Clinical Medicine; SARAH HACKETT STEVENSON, M. D., Obstetrics; DAVID W. GRAHAM, M. D. (Secretary), Surgery; PLYM S. HAYES, M. D., Chemistry and Toxicology; W. J. MAYNARD, M. D., Dermatology; W. T. MONTGOMERY, M. D., Ophthalmology and Otology; E. FLETCHER INGALS, M. D., Diseases of the Chest and Throat; F. L. WADSWORTH, M. D., Physiology and Histology; MARIE J. MERGLER, M. D. (Associate), Gynecology; WALTER L. DORLAND, M. D., Materia Medica and Therapeutics; MARY E. BATES, M. D., Lecturer on Anatomy; EUGENE S. TALBOTT, M. D., D. D. S., Dental Surgery; JOHN O. HOBBS, M. D., Demonstrator of Anatomy; JENNIE E. HAYNER, M. D., Lecturer on Hygiene; ROBERT S. HALL, M. D., Clinical Lecturer on Midwifery; EMMA M. NICHOLS, M. D., Assistant in Physiology and Lecturer on Histology; HOMER N. THOMAS, M. D., Assistant in Diseases of the Chest and Throat; ELIZA H. ROOT, M. D., ISABEL R. COPP, M. D., Assistants in Clinical Medicine; ANNETTE S. DOBBIN, M. D., Assistant Demonstrator of Anatomy.

FEES.—Matriculation, \$5; general ticket, \$50; demon-

strator's ticket, \$5; chemical laboratory ticket, required but once, \$5; graduation, \$30.

Address D. W. Graham, M. D., Secretary, 101 Warren Avenue, Chicago, Ill.

QUINCY COLLEGE OF MEDICINE (MEDICAL DEPARTMENT OF CHADDOCK COLLEGE),

QUINCY.

THE announcement for this year has not been received. The following appeared in our Students' Number last year:

FACULTY.—C. R. S. CURTIS, M. D. (Dean), Principles and Practice of Surgery; M. F. BASSETT, M. D., Principles and Practice of Medicine; VIRGIL McDAVITT, M. D., Obstetrics and Diseases of Women; WILLIAM A. BYRD, M. D., Clinical Surgery; L. H. COHEN, M. D., Chemistry and Toxicology; HENRY HATCH, M. D. (Registrar), Anatomy and Clinical Medicine; R. WOODS, M. D., Diseases of the Eye and Ear; CAREY B. ELLIS, M. D., Physiology and Hygiene; M. ROONEY, M. D., Clinical Medicine; HUGO ERICHSON, M. D., Diseases of the Mind and Nervous System; (vacancy), Materia Medica and Therapeutics; GEORGE CARLEY, Ph. D., Pharmacy; D. BRYAN BAKER, M. D., Demonstrator of Anatomy.

All applicants must present evidence of a good English education.

First course pupils will be examined on and be expected to give especial attention to anatomy, physiology, chemistry, and materia medica. Second and third course students will be particularly examined in the practical branches.

FEES.—Matriculation, \$5; professors' tickets, \$40; demonstrator's ticket, \$10; examination, \$25.

Address C. R. S. Curtis, M. D., Dean, or Henry Hatch, M. D., Registrar, Quincy, Ill.

Indiana.

FORT WAYNE COLLEGE OF MEDICINE,

FORT WAYNE.

Women are admitted.

FACULTY.—R. W. THRIFF, M. D., Puerperal Diseases and Diseases of Children (emeritus); CHRISTIAN B. STEMEN, M. D. (Dean), Surgery and Clinical Surgery; JAMES S. GREGG, M. D., Surgery and Clinical Surgery; GEORGE W. McCASKEY, Ph. B., M. D., Diseases of the Throat, Lungs, and Heart; FREDERICK S. C. GRAYSTON, M. D., and JOSEPH L. GILBERT, M. D., Theory and Practice of Medicine; I. ELLIS LYONS, M. D., Obstetrics; KENT K. WHELOCK, M. D., Diseases of the Eye and Ear; CHARLES R. DRYER, M. D., Chemistry and Toxicology; A. E. VANBUSKIRK, M. D., Anatomy and Clinical Surgery; J. H. DAVISSON, M. D., Materia Medica and Therapeutics; WILLIAM P. WHEBY, M. D., M. R. C. P., Diseases of Women; NORMAN TEAL, M. D., Orthopaedic Surgery and Clinical Surgery; WILLIAM SCOTT, M. D., Genito-urinary and Rectal Diseases; W. H. BELL, M. D., Nervous and Mental Diseases; F. R. BLOUNT, M. D., Diseases of Children; MILES F. PORTER, M. D., Physiology; J. T. WOODS, M. D., Lecturer on General Fractures; G. B. STEMEN, M. D., Assistant in the Chemical Laboratory.

The sixth annual session began September 16th, and will close March 1st.

REQUIREMENTS FOR GRADUATION.—Dissection for one session, practical instruction in chemistry, and hospital attendance, besides the usual requirements. The average on monthly examinations affects the candidate's final standing.

FEES.—Matriculation, \$5; lectures, \$40; dissection, \$5; laboratory, \$5; hospital, \$5; graduation, \$25.

Address Professor C. B. Stemen, Dean, 66 Calhoun Street, Fort Wayne, Ind.

CENTRAL COLLEGE OF PHYSICIANS AND SURGEONS,

INDIANAPOLIS.

FACULTY.—CHARLES D. PEARSON, M. D., Diseases of the Nervous System; W. S. HAYMOND, M. D., Principles and Practice of Surgery; JOHN MOFFETT, M. D., Obstetrics; R. E. HAUGHTON, M. D., Surgical Pathology, Operative and Clinical Surgery, and Medical Jurisprudence; G. C. SMYTHE, M. D. (Dean), Principles and Practice of Medicine and Sanitary Science; JOSEPH EASTMAN, M. D. (Secretary), Diseases of Women and Clinical Surgery; R. FRENCH STONE, M. D., Materia Medica and Therapeutics, and Clinical Medicine; JOHN A. SUTCLIFFE, M. D., Anatomy and Genito-urinary Diseases; S. E. EARP, M. D., Chemistry and Toxicology; J. O. STILLSON, Physiology and Diseases of the Eye and Ear; W. H. THOMAS, M. D., Demonstrator of Anatomy and Lecturer on Osteology; CANADA BUTTON, M. D., Prosecutor to the Chair of Anatomy; JOHN B. LONG, M. D., Assistant Demonstrator of Anatomy.

The regular session began October 1, 1884, and continues till March 1, 1885.

A preliminary examination is required of all who do not present evidence of a good English education. There is a voluntary three years' graded course.

FEES.—Matriculation, \$5; laboratory ticket, \$5; professors' tickets, \$40; demonstrator's ticket, \$5; hospital tickets, \$6; graduation, \$25.

Address G. C. Smythe, M. D., Dean, Indianapolis, Ind.

HOSPITAL MEDICAL COLLEGE,

EVANSVILLE.

FACULTY.—G. B. WALKER, M. D. (Dean), Obstetrics and Diseases of Women; A. M. OWEN, M. D. (Treasurer), Surgery; EDWARD MURPHY, M. D., Chemistry and Toxicology; CHARLES KNAPP, M. D. (Secretary), Principles and Practice of Medicine, and Lecturer on the Eye and Ear; T. W. STONE, M. D., Materia Medica and Therapeutics; J. E. OWEN, M. D., Anatomy; CHARLES ALEXANDER, M. D., Physiology, and Demonstrator of Anatomy; A. M. HAYDEN, M. D., Surgical Diseases of the Genito-urinary System, and Clinical Medicine; W. D. NEEL, M. D., Gynaecology and Diseases of Children; the Hon. C. L. WEDDING, Lecturer on Medical Jurisprudence.

The third regular course began October 1st, and will continue five months.

FEES.—Matriculation, \$5; lectures, \$40; practical anatomy, \$5; graduation, \$25.

Address G. B. Walker, M. D., Dean.

Iowa.

COLLEGE OF PHYSICIANS AND SURGEONS,

KEOKUK.

FACULTY (according to last year's announcement).—J. C. HUGHES, M. D. (Dean), Institutes and Practice of Surgery and Surgical Clinics; JOHN NORTH, M. D., Ph. C., Chemistry, Toxicology, and Materia Medica; GEORGE F. JENKINS, M. D., Principles and Practice of Medicine and Medical Clinics; J. A. SCROGGS, M. D., Obstetrics and Diseases of Women; GEORGE M. KELLOGG, M. D., Anatomy and Demonstrator of Anatomy; A. G. FIELD, M. D., Physiology, Pathology, General Therapeutics, and Public Hygiene; H. B. YOUNG, M. D., Lecturer on Ophthalmology and Otology; M. R. KING, Lecturer on Medical Jurisprudence; R. HEISER, Taxidermist and Curator.

FEES.—For the course, \$20; matriculation, \$5; demonstrator's ticket, \$5; graduation, \$30.

Further information can be obtained from J. C. Hughes, M. D., Dean, Keokuk, Iowa.

MEDICAL DEPARTMENT OF THE STATE UNIVERSITY OF IOWA,

IOWA CITY.

The fifteenth annual course of lectures will begin October 8, 1884, and close March 4, 1885.

A preliminary examination will be required of all students entering the first year, and also of those from other colleges which require no preliminary examination.

FACULTY.—GUSTAVUS HINRICHS, M. D., Chemistry and Toxicology; W. F. PECK, M. D. (Dean), Surgery and Clinical Surgery; P. J. FARNSWORTH, M. D., Materia Medica and Diseases of Children; W. S. ROBERTSON, M. D., Theory and Practice of Medicine, and Clinical Medicine; J. C. SHRAEDER, M. D., Obstetrics and Diseases of Women; W. D. MIDDLETON, M. D., Physiology and Microscopic Anatomy; ELMER F. CLAPP, M. D., Anatomy; O. P. SHIRAS, LL. D., Lecturer on Medical Jurisprudence; C. M. HOBBY, M. D., Lecturer on Ophthalmology and Otology; R. W. HILL, M. D., Demonstrator of Anatomy, and Curator of the Museum; O. T. GILLET, M. D. (Secretary), Assistant in Surgery; S. S. LYTLE, M. D., Prosector in Anatomy; W. D. MIDDLETON, M. D., Lecturer on Insanity.

FEES.—Lectures, \$20; matriculation, \$5; demonstrator's ticket, \$10; examination fee (for final examination), \$25; hospital ticket, \$3.

Both men and women are admitted as students.

For further information address O. T. Gillett, M. D., Secretary, Iowa City, Iowa.

THE IOWA COLLEGE OF PHYSICIANS AND SURGEONS,

DES MOINES.

FACULTY.—J. A. BLANCHARD, M. D. (Dean), Principles and Practice of Medicine; A. C. SIMONTON, M. D., Principles and Practice of Surgery, and Clinical Surgery; J. F. KENNEDY, M. D. (Secretary), Obstetrics and Clinical Diseases of Children; LEWIS SCHOOLER, M. D., Anatomy, General and Descriptive; L. C. SWIFT, M. D., Physiology, Clinical Pathology, and Hygiene; W. W. HALE, M. D., Materia Medica and Therapeutics; R. STEPHENSON, M. D., Gynecology; THOMAS SHEARER, A. M., Chemistry and Toxicology; ROBERT MCNUTT, A. M., M. D., Dermatology and Clinical Medicine; E. H. HAZEN, M. D., Diseases of the Eye and Ear; F. E. CRUTTENDEN, M. D., Diseases of the Throat and Nasal Passages; JAMES T. PRIESTLEY, M. D., Clinical Surgery and Genito-urinary Diseases; D. S. FAIRCHILD, M. D., Pathology, Histology, and Diseases of the Nervous System; the Hon. JOHN MITCHELL, Medical Jurisprudence; R. STEPHENSON, M. D., Demonstrator of Anatomy; THOMAS A. COSKERY, M. D., Assistant Demonstrator.

The third annual session began September 24, 1884, and will close March 5, 1885.

FEES.—Matriculation (paid but once), \$5; course of lectures, \$40; demonstrator's ticket, \$5; final examination fee, \$25; material for dissection, at cost.

For further information address J. A. Blanchard, M. D., Dean, 410 Fourth Street, Des Moines, Iowa.

Kentucky.

MEDICAL DEPARTMENT OF THE UNIVERSITY OF LOUISVILLE.

LOUISVILLE.

FACULTY.—J. M. BODINE, M. D. (Dean), Anatomy and Diseases of the Ear and Throat; J. W. HOLLAND, M. D., Principles and Practice of Medicine and Clinical Medicine; E. R. PALMER, M. D., Physiology and Diseases of the Chest; T. S. BELL, M. D., State Medicine and Sanitary Science; TURNER ANDERSON, M. D., Materia Medica, Therapeutics, and Clinical Medicine; DAVID W. YANDELL, M. D., Surgery and Clinical Surgery; W. O. ROBERTS, M. D., Surgical Pathology and Operative Surgery; JOHN A. OSTERLONY, M. D., Obstetrics and Diseases of Women and Children; H. A. COTTELL, M. D., Medical Chemistry and Microscopy; W. CHEATHAM, M. D., Clinical Lecturer on Diseases of Eye, Ear, and Throat; R. B. GILBERT, M. D., Demonstrator of Anatomy; C. SKINNER, M. D., Assistant Demonstrator.

SPECIAL DEMONSTRATORS.—H. A. COTTELL, M. D., Microscopy; W. CHEATHAM, M. D., Ophthalmoscopy, Laryngoscopy, and Otoscopy; SAMUEL AYERS, M. D., Surgical Dressings.

The forty-eighth annual session began September 8th, and will continue until March 3, 1885.

FEES.—Course of lectures, \$75; matriculation ticket, \$5; graduation fee, \$30; dissecting-room, \$10; hospital ticket (required by the city), \$5.

Further information may be obtained by addressing J. M. Bodine, M. D., Dean, Louisville, Ky.

KENTUCKY SCHOOL OF MEDICINE,

LOUISVILLE.

FACULTY.—W. H. WATHEN, M. D. (Dean), Obstetrics and Diseases of Women; J. B. MARVIN, M. D., Principles and Practice of Medicine and Clinical Medicine; M. F. COOMES, M. D., Physiology and Diseases of the Eye, Ear, Throat, and Nose; C. W. KELLY, M. D. (Treasurer), Anatomy and Clinical Medicine; HENRY ORENDORF, M. D., Materia Medica, Therapeutics, and Venereal Diseases; S. E. WOODY, M. D., Medical and Public Hygiene and Clinical Lecturer on Diseases of Children; JOSEPH M. MATHEWS, M. D., Surgical Pathology and Diseases of the Rectum; J. M. HOLLOWAY, M. D., Surgery and Clinical Surgery; H. HORACE GRANT, M. D., Lecturer on Operative and Minor Surgery; R. L. THOMSON, M. D., Demonstrator of Anatomy; HON. A. BARNETT and HON. J. P. HELM, Lecturers on Medical Jurisprudence.

A good English education is necessary to admission.

The preliminary course will begin January 20, 1885. The twenty-ninth annual course will begin February 10, 1885, and will continue twenty weeks.

FEES.—Matriculation, \$5; professors' tickets, \$75; dissection, \$10; graduation, \$30; clinical lectures at the City Hospital, \$5.

Address W. H. Wathen, M. D., Dean, Fourth and Chestnut Streets, Louisville, Ky.

LOUISVILLE MEDICAL COLLEGE,

LOUISVILLE.

FACULTY.—C. W. KELLY, M. D. (Registrar), Descriptive and Surgical Anatomy and Clinical Medicine; J. A. IRELAND, M. D. (Dean), Obstetrics and Gynecology; L. D. KASTENBINE, M. D., Chemistry and Urinology; EDWARD MILLER, M. D. (Secretary), Principles and Practice of Surgery; W. H. GALT, M. D., Principles and Practice of Medicine; JAMES M. HOLLOWAY, M. D., Clinical and Operative Surgery; SAMUEL COCHRANE, M. D., Physiology; GEORGE M. WARNER, M. D., Materia Medica and Therapeutics; H. B. RITTER, M. D., Obstetrics and Gynecology (Adjunct); S. COCHRAN, M. D., Demonstrator of Anatomy; HON. W. B. FLEMING, Medical Jurisprudence.

A preliminary course began September 1st. The regular session commenced October 1st, and will terminate in the last week in February, 1885.

FEES.—Matriculation, \$5; professors' tickets, \$75; demonstrator's ticket, \$10; graduation, \$30; clinical lectures at the Louisville City Hospital, \$5.

Address Professor C. W. Kelly, Registrar, southeast corner Second and Green Streets, Louisville, Ky.

Louisiana.

MEDICAL DEPARTMENT OF THE UNIVERSITY OF LOUISIANA,

NEW ORLEANS.

FACULTY.—T. G. RICHARDSON, M. D. (Dean), General and Clinical Surgery; SAMUEL M. BEMISS, M. D., Theory and Practice of Medicine and Clinical Medicine; STANFORD E. CHAILLÉ, M. D., Physiology and Pathological Anatomy; JOSEPH JONES, M. D., Chemistry and Clinical Medicine; SAMUEL LOGAN, M. D., Anatomy and Clinical Surgery; ERNEST S. LEWIS, M. D., Obstetrics and Diseases of Women and Children; JOHN B. ELLIOTT, M. D., Materia Medica, Therapeutics, and Hygiene; S. D. KENNEDY, M. D., Lecturer on Diseases of the Eye and Ear; ALBERT B. MILES, M. D., Demonstrator of Anatomy.

The fifty-first annual course will begin October 20, 1884, and close March 27, 1885. The Charity Hospital furnishes material for clinical and operative medicine and surgery.

FEES.—Tickets of the professors, \$140; practical anatomy, \$10; matriculation, \$5; graduation, \$30.

For further information address T. G. Richardson, M. D., Dean, New Orleans, La.

Maine.

MEDICAL SCHOOL OF MAINE

(BOWDOIN COLLEGE, BRUNSWICK).

In the absence of an announcement, we print the following:

FACULTY.—ISRAEL T. DANA, M. D., Pathology and Practice; ALFRED MITCHELL, M. D. (Secretary), Obstetrics and Diseases of Women and Children; CHARLES W. GODDARD, Medical Jurisprudence; FREDERIC H. GERRISH, M. D., Anatomy; HENRY CARMICHAEL, Ph. D., Chemistry; BURT G. WILDER, M. D., Physiology; STEPHEN H. WEEKS, M. D., Surgery and Clinical Surgery; CHARLES O. HUNT, M. D., Materia Medica and Therapeutics; IRVING E. KIMBALL, M. D., Demonstrator of Anatomy; EVERETT T. NEALEY, M. D., Demonstrator of Histology.

Candidates for matriculation are examined unless they are graduates of a literary institution.

FEES.—Lectures, \$78; matriculation (each term), \$5; graduation, \$25; analytical chemistry, \$10.

For further information address Alfred Mitchell, M. D., Secretary, Brunswick, Me.

Maryland.

UNIVERSITY OF MARYLAND, SCHOOL OF MEDICINE,

BALTIMORE.

The chair of chemistry is vacant, and we understand that it will not be filled this year. The lectures in that branch will be given by R. Dorsey Coale, Ph. D.

FACULTY.—WILLIAM E. A. AIKIN, M. D., LL. D., Chemistry and Pharmacy (emeritus); G. W. MILTENBERGER, M. D., Obstetrics; RICHARD MCSHERRY, M. D., Principles and Practice of Medicine; CHRISTOPHER JOHNSTON, M. D.,

Surgery (emeritus); SAMUEL C. CHEW, M. D., *Materia Medica* and Therapeutics, and Lecturer on Diseases of the Throat and Chest; FRANK DONALDSON, M. D., (Clinical) Diseases of the Throat and Chest; WILLIAM T. HOWARD, M. D., Diseases of Women and Children and Clinical Medicine; JULIAN J. CHISHOLM, M. D., Eye and Ear Diseases; FRANCIS T. MILES, M. D., Physiology and (Clinical) Diseases of the Nervous System; L. McLANE TIFFANY, M. D. (Dean), surgery; J. EDWIN MICHAEL, M. D., Anatomy and Clinical Surgery; I. EDMONDSON ATKINSON, M. D., Pathology and (Clinical) Dermatology; R. D. COALE, Ph. D., Chemistry and Toxicology; F. J. S. GORGAS, M. D., Principles of Dental Science, Dental Surgery, and Dental Mechanism; J. H. HARRIS, M. D., Operative and Clinical Dentistry; RANDOLPH WINSLOW, M. D., Demonstrator of Anatomy; HERBERT HARLAN, M. D., Assistant Demonstrator; J. LEIGHT DÖRKSEN, M. D., H. P. GALLAGHER, M. D., W. B. CANFIELD, Jr., M. D., Prosectors.

The seventy-eighth annual session began October 1st.

FEES.—Matriculation, \$5; dissection, \$10; course of lectures, \$120; graduation, \$30. Holders of scholarships pay only \$50 for the lecture course.

For further information, address Professor L. McLane Tiffany, Dean, 137 Park Avenue, Baltimore.

COLLEGE OF PHYSICIANS AND SURGEONS,

BALTIMORE.

FACULTY.—THOMAS OPIE, M. D. (Dean), Obstetrics; JOHN S. LYNCH, M. D., Principles and Practice of Medicine and (Clinical) Chest and Throat; T. S. LATIMER, M. D., Physiology and Diseases of Children; A. F. ERICH, M. D., Diseases of Women; A. FRIEDENWALD, M. D., Diseases of the Eye and Ear; C. F. BERAN, M. D., Anatomy, Genito-urinary and Orthopedic Surgery; O. J. COSKERY, M. D., Surgery; A. B. ARNOLD, M. D. (Clinical) Medicine and Diseases of the Nervous System; R. GUNDRY, M. D., *Materia Medica*, Therapeutics, and Mental Diseases; W. SIMON, M. D., Ph. D., Chemistry.

The regular winter session began October 1, 1884, and will continue until March 15, 1885.

For further information address Thomas Opie, M. D., Dean, 179 North Howard Street, Baltimore.

WOMAN'S MEDICAL COLLEGE,

BALTIMORE.

FACULTY.—B. B. BROWNE, M. D., Diseases of Women; F. A. ASHBY, M. D., Obstetrics; R. WINSLOW, M. D., Surgery; E. F. CORDELL, M. D., Principles and Practice of Medicine; W. D. BOOKER, M. D. (Dean), Physiology and Lecturer on Diseases of Children; R. H. THOMAS, M. D. (Secretary), Diseases of the Throat and Chest; J. G. JAY, M. D. (Treasurer), Anatomy and Operative Surgery; R. MURDOCK, M. D., Diseases of the Eye and Ear; C. PIGGOT, M. D., Lecturer on Chemistry; AMANDA TAYLOR NORRIS, M. D., Lecturer on *Materia Medica* and Therapeutics.

The third regular session began October 1, 1884, and will continue until May 1, 1885.

FEES.—Tickets, \$75; matriculation, \$5 (yearly); anatomy, \$10; graduation, \$30.

Address W. D. Booker, M. D. (Dean), 157 Park Avenue, Baltimore.

Massachusetts.

HARVARD MEDICAL SCHOOL

(MEDICAL DEPARTMENT OF HARVARD UNIVERSITY),

BOSTON.

As we have before announced, Dr. Oliver Wendell Holmes has resigned the chair of anatomy, becoming professor emeritus, and Dr. Calvin Ellis has resigned the office of dean. The teaching corps now stands as follows:

FACULTY.—ROBERT T. EDES, M. D., Clinical Medicine; OLIVER W. HOLMES, M. D., LL. D., Anatomy (emeritus); HENRY J. BIGELOW, M. D., Surgery (emeritus); FRANCIS MINOT, M. D., Theory and Practice of Physic; JOHN P. REYNOLDS, M. D., Obstetrics; HENRY W. WILLIAMS, M. D., Ophthalmology; DAVID W. CHEEVER, M. D., Surgery; JAMES C. WHITE, M. D., Dermatology; HENRY P. BOWDITCH, M. D. (Dean), Physiology; CHARLES F. FOLSOM, M. D., Assistant Professor of Mental Diseases; FREDERICK I. KNIGHT, M. D., Assistant Professor of Laryngology; CHARLES B. PORTER, M. D., Assistant Professor in Surgery; J. COLLINS WARREN, M. D., Assistant Professor in Surgery; REGINALD H. FITZ, M. D., Pathological Anatomy; WILLIAM L. RICHARDSON, M. D., Assistant Professor of Obstetrics; F. W. DEAPER, M. D., Assistant Professor of Legal Medicine; E. N. WHITTIER, M. D., Assistant Professor of Clinical Medicine; THOMAS DWIGHT, M. D., Anatomy; EDWARD S. WOOD, M. D., Chemistry; WILLIAM H. BAKER, M. D., Assistant Professor of Gynecology; WILLIAM B. HILLS, M. D., Assistant Professor in Chemistry; WILLIAM F. WHITNEY, M. D., Curator; M. H. RICHARDSON, M. D., Demonstrator of Anatomy, and Assistant in Surgery.

OTHER INSTRUCTORS.—S. H. DURGIN, M. D., Hygiene; HENRY P. QUINCY, M. D., Histology; F. C. SHATTUCK, M. D., Theory and Practice of Physic; FRANCIS A. HARRIS, M. D., Demonstrator of Medico-legal Examinations; F. H. WILLIAMS, M. D., *Materia Medica*; EDWARD H. BRADFORD, M. D., Clinical Surgery; FRANCIS H. DAVENPORT, M. D., Gynecology; GEORGE M. GARLAND, M. D., Clinical Medicine; JOSEPH W. WARREN, M. D., Physiology; G. W. WEST, M. D., Bandaging and Apparatus; WILLIAM W. GANNET, M. D., Pathological Anatomy; CHARLES S. MINOT, S. D., Embryology; WILLIAM C. EMERSON, M. D., Chemistry; WALTER J. OTIS, M. D., SAMUEL J. MIXTER, M. D., Anatomy; CHARLES HARRINGTON, M. D., Chemistry.

SPECIAL CLINICAL INSTRUCTORS.—JOHN HOMANS, M. D., Diagnosis and Treatment of Ovarian Tumors; FRANCIS B. GREENOUGH, M. D., and ABNER POST, M. D., Syphilis; OLIVER F. WADSWORTH, M. D., Ophthalmoscopy; J. ORNE GREEN, M. D., and CLARENCE J. BLAKE, M. D., Otology; E. G. CUTLER, M. D., and W. W. GANNET, M. D., Auscultation; JOSEPH P. OLIVER, M. D., and THOMAS M. ROTCH, M. D., Diseases of Children; SAMUEL G. WEBBER, M. D.,

and JAMES J. PUTNAM, M. D., Diseases of the Nervous System; JAMES R. CHADWICK, M. D., Gynecology.

The one hundred and second annual session began September 25, 1884, and ends on the last Wednesday in June, 1885, the intervening period being divided into two equal terms.

Except those who have passed the examination for admission to Harvard College, students will not be admitted until they have passed an examination in English, Latin, physics, and either French, German, algebra, plane geometry, or botany.

There is an optional four years' graded course; the three years' course is obligatory.

REQUIREMENTS FOR GRADUATION.—Students are examined at the end of each year's study, mainly in writing. The degree is still granted after three years' study, but the course of four years, with an average of seventy-five per cent. in all the examinations, entitles the candidate to the degree *cum laude*.

FEES.—Matriculation, \$5; each year's instruction, \$200; half-year, \$120; graduation, \$30. A few scholarships have been established.

For further particulars address Dr. H. P. Bowditch, Dean.

COLLEGE OF PHYSICIANS AND SURGEONS,

BOSTON.

FACULTY.—T. HAVEN DEARING, M. D. (Dean), Principles and Practice of Surgery; ELISHA CHENERY, M. D., Principles and Practice of Medicine; ASA F. PATTEE, M. D., Materia Medica and Therapeutics; ARTHUR H. WILSON, M. D., Anatomy; J. C. GLEASON, M. D., Clinical Medicine; H. W. DUDLEY, M. D., Pathology; GEORGE E. MECUEN, M. D., Obstetrics; ARTHUR B. MORONG, M. D., Physiology and Hygiene; WILLIAM R. CHIPMAN, M. D., Operative Surgery.

LECTURERS ON SPECIAL SUBJECTS.—Judge E. C. BUMPUS, Medical Jurisprudence; ASA F. PATTEE, M. D., Diseases of the Nervous System; J. R. BARSS, M. D., Ophthalmology and Otology; T. HAVEN DEARING, M. D., Dermatology; ARTHUR H. WILSON, M. D., Diseases of the Genito-urinary System; JOHN F. WELCH, M. D., Laryngoscopy and Diseases of the Throat; ELISHA CHENERY, M. D., Gynecology and Diseases of Children; J. C. FRASER, M. D., Orthopædic Surgery; J. W. KLINGHAMMER, M. D., Medical, C. A. PITKIN, M. D., General Chemistry; J. W. JOHNSON, M. D., Materia Medica and Therapeutics; CHARLES F. OSMAN, M. D., Obstetrics; ANDREW F. MEANS, Practice of Medicine; W. H. FALES, M. D., Demonstrator of Anatomy.

The fifth annual course will begin October 8, 1884, and end the second Wednesday in May, 1885.

FEES.—Matriculation, \$5; tickets for the full course, \$85; demonstrator's ticket, \$5; anatomical material, for each part, \$2 or \$4. Graduation fee, \$30.

For further information address T. Haven Dearing, M.D., Dean, Braintree, Mass.

Michigan.

MICHIGAN COLLEGE OF MEDICINE,

DETROIT.

FACULTY.—HENRY F. LYSTER, M. D. (President), Principles and Practice of Medicine; WILLIAM BRODIE, M. D., Clinical Medicine; JAMES B. BOOK, M. D. (Registrar), Principles and Practice of Surgery and Clinical Surgery; WILLIAM C. GUSTIN, M. D., Obstetrics, Clinical Midwifery, and Diseases of Children; DANIEL LA FERTE, M. D. (Secretary), Anatomy, Orthopædic Surgery, and Clinical Surgery; C. HENRI LEONARD, M. D., Diseases of Women and Clinical Gynecology; CHARLES DOUGLAS, M. D., Diseases of Children and Clinical Medicine; J. E. CLARK, M. D., General Chemistry and Physics; CHARLES C. YEMANS, M. D., Genito-urinary Diseases, and Diseases of the Skin; CHARLES J. LUNDY, M. D., Diseases of the Eye, Ear, and Throat; WILLIAM C. MAYBURY, Esq., Medical Jurisprudence; C. A. DEVENDORF, M. D., Clinical Obstetrics, and the Puerperal Diseases; H. C. WYMAN, M. D., Physiology and Histology; DUNCAN MCLEOD, M. D., Materia Medica and Therapeutics; A. B. CHAPIN, M. D., Principles of Medicine; F. P. ANDERSON, M. D., Lecturer on Diseases of the Nervous System; F. W. OWEN, M. D., and W. N. MEREDITH, M. D., Demonstrators of Anatomy; E. A. P. RIKY, M. D., Instructor in Microscopy.

The fifth annual session began September 2, 1884, and will continue six months. There is a three years' graded course. Students who are not in possession of the degree of a college or university, or of a certificate from a high school or other recognized educational institution, will be required to pass a satisfactory examination for admission. Students who have been admitted to other medical colleges, whose standard of matriculation is recognized by this college, will be matriculated without examination.

The requirements for graduation are as usual.

FEES.—Matriculation, \$5; regular session, \$50; preliminary (optional) term, \$5; graduation, \$20. Chemical and anatomical material "at reasonable rates."

Address James B. Book, M. D., Registrar, 303 Jefferson Avenue, Detroit, Mich.

Minnesota.

MINNESOTA COLLEGE HOSPITAL,

MINNEAPOLIS.

FACULTY.—F. A. DUNSMOOR, M. D. (Dean), Surgery; G. F. FRENCH, M. D., Obstetrics; A. W. ABBOTT, M. D., Anatomy; A. J. STONE, M. D., Diseases of Women; JOHN FULTON, Ph. D., M. D., Diseases of the Eye and Ear; T. F. QUINBY, M. D., Materia Medica and Therapeutics; JAY OWENS, M. D., Theory and Practice of Medicine; C. L. WELLS, M. D., Diseases of Children; C. H. HUNTER, M. D., Histology and Pathology; E. A. PATTON, M. D., Physiology; H. J. BURWASH, M. D., Clinical Medicine and Hygiene; W. S. LATON, M. D., Toxicology; CHARLES W. DREW, Ph. B., M. D., Chemistry; C. E. RIGGS, M. D., Nervous Diseases; JAMES QUINN, M. D., Genito-urinary Diseases; S. S. WENTWORTH, M. D., Dermatology; M. M. FRISSELL,

M. D., D. D. S., Medical and Surgical Dentistry; W. F. GRINDINGS, D. D. S., F. H. BRAUMER, D. D. S., Prosthetic Dentistry and Metallurgy; A. B. CATES, M. D. (Adjunct), Obstetrics; the Hon. EUGENE M. WILSON, Medical Jurisprudence; FRANK BURTON, M. D., Demonstrator of Anatomy.

The fourth regular session will begin October 6, 1884, and will close February 28, 1885.

Candidates having a degree in arts or sciences, or presenting a certificate from a high school or other institution in good standing, or a teacher's certificate, will be admitted without examination.

REQUIREMENTS FOR GRADUATION.—Every candidate must have dissected each part of the cadaver, in addition to the ordinary requirements.

FEES.—Matriculation, \$5; for all tickets and necessary dissecting material, \$55.

For further information address F. A. Dunsmoor, M. D., Dean, 8 Washington Avenue, South, Minneapolis, Minn.

MISSOURI.

MISSOURI MEDICAL COLLEGE,

ST. LOUIS.

THE secretary informs us that a practical chemical laboratory and a practical course in microscopy have been added, and that the graduation fee has been abolished and a fee for examination instituted in its stead.

FACULTY.—WILLIAM M. MCPHEETERS, M. D., Professor of Materia Medica and Therapeutics (emeritus); JOHN S. MOORE, M. D., Principles of Medicine and Hygiene; G. M. B. MAUGHS, M. D., Obstetrics and Diseases of Women; P. GERVAIS ROBINSON, M. D., Practice of Medicine and Clinical Medicine; J. K. BAUDY, M. D., LL. D., Psychological Medicine, Diseases of the Nervous System, Clinical Medicine, and Medical Jurisprudence; CHARLES E. MICHEL, M. D., Ophthalmology, Histology, and Pathological Anatomy; H. TUHOLSKE, M. D., Clinical Surgery and Surgical Pathology; OTTO A. WALL, M. D., Ph. G., Materia Medica, Therapeutics, and Pharmacy; C. A. TODD, A. M., M. D., Anatomy and Diseases of the Ear and Throat; J. P. KINGSLEY, M. D. (Secretary), Physiology and (Clinical) Diseases of Children; T. F. PREWITT, M. D. (Dean), Principles and Practice of Surgery and Clinical Surgery; C. O. CURTMAN, M. D., Chemistry; P. V. SCHENCK, M. D., Clinical Lecturer on Gynecology; C. A. TODD, M. D., Demonstrator of Anatomy; JUSTIN STEER, M. D., Assistant Demonstrator.

ASSISTANTS.—JUSTIN STEER, M. D.; F. D. MOONEY, M. D.

The forty-fourth annual session began October 1st and will continue five months.

REQUIREMENTS FOR GRADUATION.—Besides the ordinary requirements, the candidate must have attended the dissections and clinics in this school as long as he was a student thereof.

A preliminary examination will be held in accordance with the rules of the State boards.

FEES.—Course of lectures, \$60; matriculation (good until the following March), \$5; dissecting-room, \$10; examination for degree (not returnable), \$30.

For further information address T. F. Prewitt, M. D., Dean, 3718 N. Ninth Street, St. Louis, Mo.

ST. LOUIS MEDICAL COLLEGE,

ST. LOUIS.

FACULTY.—A. LITTON, M. D., Chemistry and Pharmacy; J. B. JOHNSON, M. D., Principles and Practice of Medicine; E. H. GREGORY, M. D., Principles and Practice of Surgery and Clinical Surgery; J. S. B. ALLEYNE, M. D. (Dean), Therapeutics and Materia Medica, and Diseases of Children; E. F. SMITH, M. D., Clinical Medicine and Pathological Anatomy; L. CH. BOISLINIERE, M. D., Obstetrics; G. BAUMGARTEN, M. D., Physiology; H. H. MUDD, M. D., Anatomy and Clinical Surgery; W. E. FISCHER, M. D., Hygiene and Forensic Medicine; R. LUEDEKING, M. D., Pathological Anatomy.

LECTURERS.—JOHN GREEN, M. D., Ophthalmology; W. L. BARRET, M. D., Diseases of Women; J. M. SCOTT, M. D., Clinical Medicine; G. A. MOSES, M. D., Clinical Gynecology; N. B. CARSON, M. D., Assistant to the Chair of Surgery; W. C. GLASGOW, M. D., Diseases of the Chest and Laryngology; J. FRIEDMAN, M. D., Demonstrator of Chemistry; EDWARD EVERS, M. D., Histology; JOHN P. BRYSON, M. D., Diseases of the Genito-urinary Organs; W. A. McCANDLESS, M. D., FRANK R. FRY, M. D., Demonstrators of Anatomy; C. H. HUGHES, M. D., Nervous Diseases; HARRY HODGEN, M. D., Curator of the Museum; E. M. NELSON, M. D., Assistant to the Chair of Obstetrics.

The forty-third annual session began September 22, 1884, and continues until March 1, 1885. All matriculates are required to pass an examination.

REQUIREMENTS FOR GRADUATION.—Three regular courses of lectures must have been attended.

FEES.—Matriculation fee (paid but once), \$5; fees for each regular term, \$90. Graduates of this institution have perpetual free admission. Graduates of any accredited regular school of medicine will be charged a fee of \$25 for attendance during a winter session.

For further information address J. S. B. Alleyne, M. D., Dean, 3132 Washington Avenue, St. Louis, Mo.

ST. LOUIS COLLEGE OF PHYSICIANS AND SURGEONS,

ST. LOUIS.

FACULTY.—LOUIS BAUER, M. D., M. R. C. S. Eng. (Dean), Principles and Practice of Surgery, Clinical Surgery, and Orthopaedic Surgery; W. B. HAZARD, M. D. (Secretary), Chemistry and Toxicology, and Nervous and Mental Diseases; ALGERNON S. BARNES, M. D., Obstetrics and Diseases of Women; J. G. LODGE, Esq., and the Hon. H. D. LAUGHLIN, Medical Jurisprudence; A. H. OHMANN-DUMESNIL, M. D., Dermatology and Syphilis; A. C. BERNAYS, M. D., Practical and Descriptive Anatomy and (temporarily) Gynecology; C. B. ELLIS, M. D., Physiology and Laryngology; E. M. POWERS, M. D., Military, Accidental, and Clinical Surgery; L. BREMER, M. D., Histology and Pathological Anatomy; W. H. MAYFIELD, M. D., Materia Medica, Thera-

peutics, Public Hygiene, and Sanitation; J. WISE, M. D., Diseases of Children; C. BARCK, M. D., Ophthalmology and Otology; A. KLEINECKE, M. D., Gynecology and Nervous and Mental Diseases (Adjunct); HENRY SUMMA, M. D., Surgery (Adjunct); C. B. ELLIS, M. D., Demonstrator of Anatomy.

The sixth annual course will begin October 13, 1884, and end on the first Saturday of March, 1885.

FEES.—Matriculation, \$5; lecture tickets (including demonstrators' fees), \$50; examination fee, \$25.

For further information address Professor Louis Bauer, Dean, 519 Pine Street, St. Louis.

MEDICAL DEPARTMENT OF THE UNIVERSITY OF KANSAS CITY,

KANSAS CITY.

FACULTY.—HENRY F. HEREFORD, M. D. (President), Obstetrics and Diseases of Women; J. M. ALLEN, M. D., Principles and Practice of Medicine; JOHN W. JACKSON, M. D., Principles and Practice of Surgery; JOHN W. ELSTON, M. D. (Secretary), Materia Medica, Pharmacy, and Therapeutics; EUGENE R. LEWIS, A. B., M. D., General Descriptive and Surgical Anatomy; JOHN H. DUNCAN, A. B., M. D., Dermatology and Physiology; Hon. HENRY P. WHITE, Medical Jurisprudence; JOHN R. SNELL, M. D. (Dean), Clinical Medicine and Physical Diagnosis; JAMES P. JACKSON, M. D., Clinical and Operative Surgery; WILLIS P. KING, M. D., Gynecology; FLAVEL B. TIFFANY, M. D., Diseases of the Eye and Ear and Histology; JOSHUA MILLER, M. D., Orthopædic Surgery and Curator; CHARLES W. ADAMS, A. M., M. D. (Treasurer), Hygiene and Diseases of Children; ALBERT P. CAMPBELL, A. M., M. D., Diseases of the Throat and Chest; GEORGE W. DAVIS, M. D., Genito-urinary Diseases; JOHN T. EGGERS, M. D. (Adjunct), Anatomy and Demonstrator.

This session began the middle of September, 1884, and will continue twenty-six weeks.

For further information address John W. Elston, M. D., Secretary, 515 May Street, Kansas City, Mo.

New Hampshire.

DARTMOUTH MEDICAL COLLEGE (MEDICAL DEPARTMENT OF DARTMOUTH COLLEGE), HANOVER.

FACULTY (last year).—EDWIN J. BARTLETT, M. D., Chemistry and Pharmacy; JESSE P. BANCROFT, M. D., Mental Diseases; JOHN ORDONAU, M. D., LL. D., Medical Jurisprudence; CARLTON P. FROST, M. D. (Dean), Science and Practice of Medicine; LOUIS ELSBERG, M. D., Laryngology; EDWARD S. DUNSTER, M. D., Obstetrics; HENRY M. FIELD, M. D., Therapeutics and Materia Medica; WILLIAM W. SEELY, M. D., Ophthalmology; PHINEAS S. CONNER, M. D., Surgery; LYMAN B. HOW, M. D., Anatomy and Physiology; PAUL F. MUNDE, M. D., Gynecology; WILLIAM T. SMITH, M. D., Assistant Lecturer on Anatomy and Physiology.

The eighty-eighth annual course began July 30th, and was to continue sixteen weeks.

FEES.—Matriculation (paid annually), \$5; for the course, \$77; graduation fee (not returnable), \$25; chemicals and ordinary breakage, \$3.

For further information address Carlton P. Frost, M. D., Dean, Hanover, N. H.

New York.

COLLEGE OF PHYSICIANS AND SURGEONS (MEDICAL DEPARTMENT OF COLUMBIA COLLEGE),

IN THE CITY OF NEW YORK.

FACULTY.—JOHN C. DALTON, M. D. (President), Physiology and Hygiene (emeritus); ALONZO CLARK, M. D., LL. D., Pathology and Practical Medicine (emeritus); JOHN G. CURTIS, M. D. (Secretary), Physiology and Hygiene; THOMAS M. MARKOE, M. D., Principles of Surgery; WILLIAM DETMOLD, M. D., Clinical and Military Surgery (emeritus); T. GAILLARD THOMAS, M. D., Clinical Gynecology; JOHN T. METCALFE, M. D., Clinical Medicine (emeritus); HENRY B. SANDS, M. D., Practice of Surgery; JAMES W. McLANE, M. D., Obstetrics, Gynecology, and Diseases of Children; THOMAS T. SABINE, M. D., Anatomy; CHARLES F. CHANDLER, Ph. D., Chemistry and Medical Jurisprudence; EDWARD CURTIS, M. D., Materia Medica and Therapeutics; FRANCIS DELAFIELD, M. D., Pathology and Practical Medicine; WILLIAM H. DRAFER, M. D., Clinical Medicine.

CLINICAL PROFESSORS.—CORNELIUS R. AGNEW, M. D., Diseases of the Eye and Ear; ABRAHAM JACOBI, M. D., Diseases of Children; FESSENDEN N. OTIS, M. D., Venereal Diseases; EDWARD C. SEGUIN, M. D., Diseases of the Mind and Nervous System; GEORGE M. LEFFERTS, M. D., Laryngoscopy and Diseases of the Throat; WILLIAM S. HALSTED, M. D., Demonstrator of Anatomy; GEORGE H. FOX, M. D., Diseases of the Skin; T. MITCHELL PRUDEN, M. D., Director of the Physiological and Pathological Laboratory of the Alumni Association; ROBERT F. WEIR, M. D., Surgery; F. H. MARKOE, M. D., First Assistant Demonstrator of Anatomy; R. J. HALL, M. D., Second Assistant Demonstrator of Anatomy; GEORGE M. TUTTLE, M. D., Assistant to the Chair of Obstetrics; G. L. PEABODY, M. D., and A. B. BALD, M. D., Clinical Lecturers on Medicine.

The seventy-seventh course began on October 1, 1884, and will last until about the 1st of May, 1885.

FEES.—Matriculation, \$5; lectures, \$140; graduation, \$30; demonstrator, \$10.

Address John G. Curtis, M. D., Secretary, Twenty-third Street and Fourth Avenue.

ALBANY MEDICAL COLLEGE,

ALBANY.

FACULTY.—THOMAS HUN, M. D., LL. D. (Dean), Institutes of Medicine (emeritus); SAMUEL O. VAN DER POEL, M. D., LL. D., Pathology, Practice, and Clinical Medicine (emeritus); ALBERT VAN DERVEER, M. D., Ph. D., Surgery and Clinical Surgery; SAMUEL B. WARD, M. D., Pathology, Practice, Clinical Medicine, and Hygiene; MAURICE PERKINS, M. D., Chemical Philosophy and Organic Chemistry; JOHN M. BIGELOW, M. D., Materia Medica, Therapeutics,

Diseases of the Throat, and Clinical Laryngoscopy; LEWIS BALCH, M. D., Ph. D., Anatomy; JOHN P. GRAY, M. D., LL. D., Psychological Medicine; JAMES P. BOYD, M. D., Obstetrics and Diseases of Women and Children; WILLIS G. TUCKER, M. D., Ph. D. (Registrar), Inorganic and Analytical Chemistry and Medical Jurisprudence; WILLIAM HAILES, M. D., Histology and Pathological Anatomy; CYRUS S. MERRILL, M. D., Ophthalmology and Otolaryngology; FRANKLIN TOWNSEND, M. D., Physiology; FREDERICK C. CURTIS, M. D., Dermatology; HENRY HUN, M. D., Lecturer on Nervous Diseases; EUGENE VAN SLYKE, M. D., Demonstrator of Anatomy; S. R. MORROW, M. D., Lecturer Adjunct on Surgery; HENRY MARCH, M. D., Curator.

The fifty-fourth winter session began September 9, 1884, and will continue until March 4, 1885. There is a three years' graded course.

FEES.—Matriculation (yearly), \$5; lecture tickets, \$100; dissection, \$10; graduation, \$25; chemical laboratory (each course), \$10; laboratory course in histology (each course), \$10.

Address Willis G. Tucker, M. D., Registrar, 4 Lancaster Street, Albany, N. Y.

MEDICAL DEPARTMENT OF THE UNIVERSITY OF BUFFALO,

BUFFALO.

FACULTY.—JULIUS F. MINER, M. D., Operative and Clinical Surgery (emeritus); THOMAS F. ROCHESTER, M. D., Principles and Practice of Medicine and Clinical Medicine; WILLIAM H. MASON, M. D., Physiology and Microscopy; E. V. STODDARD, M. D., Materia Medica and Hygiene; CHARLES CARY, M. D. (Secretary), Anatomy; MATTHEW D. MANN, M. D., Obstetrics and Gynecology; RUDOLPH A. WITTHAUS, M. D., Chemistry and Toxicology; ROSWELL PARK, M. D., Principles and Practice of Surgery and Clinical Surgery; JUDSON B. ANDREWS, M. D., Psychological Medicine; LUCIEN HOWE, M. D., Ophthalmology; MAHLON B. FOLWELL, M. D., Dermatology and Syphilis (Clinical); FREDERICK PETERSON, M. D., Pathology; D. W. HARRINGTON, M. D., Clinical Lecturer on Surgery; WILLIAM C. PHELPS, M. D., Demonstrator of Anatomy; ANSLEY WILCOX, LL. B., Lecturer on Medical Jurisprudence.

The fortieth annual course began September 25, 1884, and will continue twenty-two weeks.

FEES.—Matriculation (annually), \$5; tickets of all the professors, \$100; perpetual ticket, \$150; graduation, \$25.

Address Charles Cary, M. D., 305 Delaware Avenue, Buffalo, N. Y.

BELLEVUE HOSPITAL MEDICAL COLLEGE, NEW YORK.

FACULTY.—ISAAC E. TAYLOR, M. D. (President), Obstetrics and Diseases of Women and Children (emeritus); FORDYCE BARKER, M. D., LL. D., Clinical Midwifery and Diseases of Women; BENJAMIN W. MCCREADY, M. D., Materia Medica and Therapeutics (emeritus); AUSTIN FLINT, M. D., LL. D., Principles and Practice of Medicine and Clinical Medicine; FREDERIC S. DENNIS, M. D., Principles

and Practice of Surgery and Clinical Surgery; LEWIS A. SAYRE, M. D., Orthopædic Surgery and Clinical Surgery; ALEXANDER B. MOTT, M. D., Clinical and Operative Surgery; WILLIAM T. Lusk, M. D., Obstetrics and Diseases of Women and Children and Clinical Midwifery; A. A. SMITH, M. D., Materia Medica and Therapeutics and Clinical Medicine; AUSTIN FLINT, JR., M. D. (Secretary), Physiology and Physiological Anatomy; JOSEPH D. BRYANT, M. D., Anatomy and Clinical Surgery and (Associate) Orthopædic Surgery; R. OGDEN DOREMUS, M. D., LL. D., Chemistry and Toxicology; EDWARD G. JANEWAY, M. D., Pathological Anatomy and Clinical Medicine and (Associate) Principles and Practice of Medicine.

PROFESSORS OF SPECIAL DEPARTMENTS.—HENRY D. NOYES, M. D., Ophthalmology and Otolaryngology; EDWARD L. KEYES, M. D., Cutaneous and Genito-urinary Diseases; JOHN P. GRAY, M. D., LL. D., Psychological Medicine and Medical Jurisprudence; GASPAR GRISWOLD, M. D., Demonstrator of Anatomy; J. LEWIS SMITH, M. D., Clinical Professor of Diseases of Children; CHARLES A. DOREMUS, M. D., Ph. D., Professor Adjunct to the Chair of Chemistry and Toxicology; BEVERLEY ROBINSON, M. D., Clinical Professor of Medicine; FRANCKE H. BOSWORTH, M. D., Diseases of the Throat.

The twenty-fourth regular session began September 17, 1884, and extends to the latter part of March, 1885. At its close, the spring session begins, and lasts until about the middle of June.

FEES FOR THE WINTER SESSION.—Tickets, \$20 each, or all for \$140; matriculation, \$5; dissection, \$10; graduation, \$30.

Address the secretary, Professor Austin Flint, Jr., Bellevue Hospital Medical College, New York City.

MEDICAL DEPARTMENT OF THE UNIVERSITY OF THE CITY OF NEW YORK.

FACULTY.—ALFRED C. POST, M. D., LL. D. (President), Clinical Surgery (emeritus); CHARLES INSLEE PARDEE, M. D. (Dean), Otolaryngology; J. W. S. ARNOLD, M. D., Physiology and Histology (emeritus); JOHN C. DRAPER, M. D., LL. D., Chemistry; ALFRED L. LOOMIS, M. D., Pathology and Practice of Medicine; WILLIAM DARLING, M. D., LL. D., F. R. C. S., General and Descriptive Anatomy; WILLIAM H. THOMSON, M. D., Materia Medica and Therapeutics, and Diseases of the Nervous System; J. WILLISTON WRIGHT, M. D., Surgery; WILLIAM M. POLK, M. D., Obstetrics and Diseases of Women and Children; S. OAKLEY VAN DER POEL, M. D., LL. D., Public Hygiene; LEWIS A. STIMSON, M. D., Physiology and Histology, Clinical Surgery; STEPHEN SMITH, M. D., Clinical Surgery; A. E. MACDONALD, LL. B., M. D., Medical Jurisprudence and Diseases of the Mind; HERMAN KNAPP, M. D., Ophthalmology; FANEUIL D. WEISSE, M. D., Practical and Surgical Anatomy; R. A. WITTHAUS, M. D., Physiological Chemistry; JOSEPH E. WINTERS, M. D., Demonstrator of Anatomy.

CLINICAL PROFESSORS.—H. G. PIFFARD, M. D., Dermatology; F. R. S. DRAKE, M. D., Practice of Medicine; N. M. SHAFFER, M. D., Orthopædic Surgery; JOSEPH E. WIN-

TERS, M. D., Diseases of Children; WILLIAM C. JARVIS, M. D., Laryngology; LAURENCE JOHNSON, M. D., Medical Botany; P. A. MORROW, M. D., Venereal Diseases.

The forty-fourth session began October 1st, and lasts until the middle of March.

The fees for the winter session are the same as at the Bellevue Hospital Medical College. There is a fund for assisting a limited number of needy students, preferably the sons of physicians or clergymen, who pay \$48 for the winter session, together with the matriculation fee. There are ten scholarships.

Communications may be addressed to Professor Charles Inslee Pardee, M. D., Dean, 410 East Twenty-sixth Street.

COLLEGE OF MEDICINE,
SYRACUSE UNIVERSITY,
SYRACUSE.

FACULTY.—FREDERICK HYDE, M. D. (Dean), Principles and Practice of Surgery; HENRY D. DIDAMA, M. D., Principles and Practice of Medicine and Clinical Medicine; NELSON NIVISON, M. D., Physiology, Pathology, and Hygiene; WILFRED W. PORTER, M. D., Obstetrics and Gynecology; WILLIAM T. PLANT, M. D. (Registrar), Diseases of Children and Clinical Medicine; ROGER W. PEASE, M. D., Operative and Clinical Surgery; ALFRED MERCER, M. D. (Treasurer), Minor and Clinical Surgery; W. MANLIUS SMITH, M. D., Chemistry and Botany; JOHN VAN DUYN, M. D., Ophthalmology and Otolaryngology; M. A. KNAPP, Esq., Forensic Medicine; GAYLORD P. CLARK, M. D., Anatomy; W. H. DUNLAP, M. D., Materia Medica and Therapeutics; DAVID M. TOTMAN, M. D., Lecturer on Physiology; A. CLIFFORD MERCER, M. D., Lecturer on Microscopy and Histology; W. H. MILLS, M. D., Director of Anatomical Laboratory, and Librarian; H. L. ELSNER, M. D., Lecturer on the Practice of Medicine; J. C. HEFFRON, M. D., Lecturer on Microscopy and Histology; A. B. MILLER, M. D., Instructor in Obstetrics and Gynecology.

The first term of the thirteenth college year will begin October 7, 1884, and end the second Tuesday in February, 1885. The second term will begin the second Wednesday of February, 1885, and continue until the second Thursday of June, 1885.

FEES.—Matriculation, \$5; practical anatomy, \$10; tuition for the year, \$100; either term alone, \$65; graduation, \$25.

Address William T. Plant, M. D., Registrar, Syracuse, N. Y.

LONG ISLAND COLLEGE HOSPITAL,
BROOKLYN.

FACULTY.—DANIEL AYRES, M. D., LL. D., Surgical Pathology and Clinical Surgery (emeritus); SAMUEL G. ARMOR, M. D., LL. D. (Dean), Principles and Practice of Medicine and Clinical Medicine; GEORGE W. PLYMPTON, M. D., Physics, Chemistry, and Toxicology; CORVON L. FORD, M. D., LL. D., Anatomy; ALEXANDER J. C. SKENE, M. D., Medical and Surgical Diseases of Women and Diseases of Children;

JARVIS S. WIGHT, M. D. (Registrar), Operative and Clinical Surgery; JOSEPH H. RAYMOND, M. D., Physiology and Sanitary Science; EDWARD SEAMAN BUNKER, M. D., Histology and General Pathology; JOHN A. MCCORKLE, M. D., Materia Medica and Therapeutics; CHARLES JEWETT, M. D., Obstetrics.

LECTURERS ON SPECIAL SUBJECTS.—JONATHAN S. PROUT, M. D., Diseases of the Eye; ARTHUR MATHEWSON, M. D., Diseases of the Ear; SAMUEL SHERWELL, M. D., Diseases of the Skin; THOMAS R. FRENCH, M. D., Laryngology; HENRY N. READ, M. D., Diseases of Children; FRANCIS H. STUART, M. D., Obstetrics; ELIAS H. BARTLEY, M. D., Physiological and Practical Chemistry; GEORGE H. ATKINSON, M. D., Genito-urinary Diseases; FRANK E. WEST, M. D., Physical Diagnosis and Diseases of the Kidney; EDWIN A. LEWIS, M. D., Anatomy; JOHN C. SHAW, M. D., Diseases of the Nervous System; ———, Medical Jurisprudence; FRANK MADDEN, M. D., Demonstrator of Anatomy.

The collegiate year is divided into two terms—the preliminary and the regular term. The elementary branches are taught in the former mainly by recitations, the students being divided into three grades. At present the graded course is optional. The preliminary term began September 17, 1884, and the regular term will begin January 5, 1885.

FEES.—Yearly matriculation, \$5; preliminary term, \$40; regular term, \$100; demonstrator's ticket, \$5; graduation, \$25; practical chemistry, \$5.

For further information, address Dr. Samuel G. Armor, Dean, Mansion House, Brooklyn.

MEDICAL DEPARTMENT OF
NIAGARA UNIVERSITY,
BUFFALO.

FACULTY.—JOHN CRONYN, M. D. (President), Principles and Practice of Medicine and Clinical Medicine; CHARLES C. F. GAY, M. D., Clinical and Operative Surgery; WILLIAM S. TREMAINE, M. D., Principles and Practice of Surgery and Clinical Surgery; THOMAS LOTHROP, M. D., Obstetrics; WILLIAM H. HEATH, M. D., Descriptive and Surgical Anatomy; AUGUSTUS R. DAVIDSON, M. D., Medical Chemistry, Toxicology, and Dermatology; GEORGE E. FELL, M. D., Physiology and Microscopy; CHARLES G. STOKTON, M. D., Materia Medica and Therapeutics; CLAYTON M. DANIELS, M. D., Clinical Surgery and Adjunct Professor of Surgery; HENRY D. INGRAHAM, M. D., Gynecology and Pædiatrics; ALVIN A. HUBBELL, M. D. (Secretary), Ophthalmology, Otolaryngology, and Laryngology; HON. JOSEPH M. CONGDON, Jurisprudence; FLOYD S. CREGO, M. D., Lecturer on Nervous Diseases and Insanity; CARLTON C. FREDERICK, M. D., Lecturer on Obstetrics; DOUGALD MACNIEL, M. D., Lecturer on Dermatology; HERBERT MICKLE, M. D., Lecturer on Pathology and Pathological Anatomy; FREDERICK R. CAMPBELL, M. D., Lecturer on Hygiene; FRANK H. POTTER, M. D., Demonstrator of Surgery; JOHN L. C. CRONYN, M. D., Demonstrator of Anatomy; EDWARD CLARK, M. D., Assistant Demonstrator of Anatomy.

The regular winter term began October 1, 1884, and will

continue until March 24, 1885. The spring term will open April 1, 1885, and close May 29, 1885.

FEES.—Matriculation, \$5; winter course, \$60; spring course, \$15; anatomy, \$5; graduation, \$25.

For further particulars address A. A. Hubbell, M. D., Secretary, 212 Franklin Street, Buffalo, N. Y.

NEW YORK POLYCLINIC,

NEW YORK.

FACULTY.—JAMES R. LEAMING, M. D. (President), Diseases of the Chest and Physical Diagnosis; JOHN H. RIPLEY, M. D., Diseases of Children; E. DARWIN HUDSON, JR., M. D., General Medicine and Diseases of the Chest; LOUIS ELSEBERG, M. D., Laryngology and Rhinology; LANDON CARTER GRAY, M. D., Diseases of the Mind and Nervous System, and Electropathy; THOMAS A. MCBRIDE, M. D., Diseases of the Mind and Nervous System; RICHARD C. BRANDEIS, M. D., Laryngology, Rhinology, and Otolaryngology; A. R. ROBINSON, M. D., and EDWARD B. BRONSON, M. D., Dermatology; JOHN A. WYETH, M. D. (Secretary), and A. G. GERSTER, M. D., General and Genito-urinary Surgery; PAUL F. MUNDÉ, M. D., W. GILL WYLIE, M. D., and JAMES B. HUNTER, M. D., Gynecology; EMIL GREENING, M. D., and DAVID WEBSTER, M. D., Ophthalmology; V. P. GIBNEY, M. D., Orthopædic Surgery; WALTER R. GILLETTE, M. D., Obstetrics; GEORGE B. FOWLER, M. D., Physiological Chemistry.

INSTRUCTORS.—DONALD M. CAMMANN, M. D., and W. C. CAMPBELL, M. D., Diseases of the Chest and Physical Diagnosis; R. C. M. PAGE, M. D., and C. M. CAULDWELL, M. D., General Medicine and Diseases of the Chest; R. MILBANK, M. D., Diseases of Children; HENRY SCHWEIG, M. D., Diseases of the Throat, Nose, and Ear; GEORGE T. JACKSON, M. D., Diseases of the Skin; M. A. STARR, M. D., Diseases of the Mind and Nervous System; W. L. WARDWELL, M. D., Operative Surgery on the Cadaver; R. M. CRAMER, M. D., and R. B. KIMBALL, M. D., Minor Surgery and Surgical Dressings; CLEMENT CLEVELAND, M. D., JOSEPH D. ANWAY, M. D., E. H. GRANDIN, M. D., A. M. JACOBUS, M. D., and JAMES R. GOFFE, M. D., Gynecology; E. FRIEDENBERG, M. D., and A. BARKER, M. D., Diseases of the Eye; ROBERT A. MURRAY, M. D., Obstetrics.

The regular session of 1884-'85 opened on Monday, September 22d, and will continue until June 1, 1885. None but practitioners are admitted, and the classes are so divided that each member may have an opportunity to study the clinical features of cases with which he is brought in contact.

FEES.—Diseases of the Chest, Physical Diagnosis, and General Medicine, \$25; Diseases of Children, \$15; Diseases of the Nervous System and Electropathy, \$15; Diseases of the Throat, Nose, and Ear, \$15; General Genito-urinary and Orthopædic Surgery, Surgical Dressings, and Operations on the Cadaver (\$2 additional), \$35; Diseases of Women, \$35; Diseases of the Eye, \$15; Diseases of the Skin, \$15; Obstetrics, \$15; Physiological Chemistry, including Urinary Analysis, \$10.

For further information address John A. Wyeth, M. D., Secretary, 214 and 216 East Thirty-fourth Street, New York.

NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL,

NEW YORK.

FACULTY.—JAMES L. LITTLE, M. D., Clinical and Operative Surgery; WILLIAM A. HAMMOND, M. D., Diseases of the Mind and Nervous System and Medical Electricity; D. B. ST. JOHN ROOSA, M. D., LL. D. (President), Diseases of the Eye and Ear; F. R. STURGIS, M. D., Diseases of the Skin and Genito-urinary Organs and Venereal Diseases; CLINTON WAGNER, M. D., Diseases of the Nose and Throat; T. E. SATTERTHWAITE, M. D., Pathology and General Medicine; MARY PUTNAM JACOBI, M. D., Diseases of Children; B. F. DAWSON, M. D., Diseases of Women; E. C. SPITZKA, M. D., Anatomy and Physiology of the Nervous System; M. J. ROBERTS, M. D., Orthopædic Surgery and Mechanical Therapeutics; E. L. PARTRIDGE, M. D., Obstetrics; CHARLES L. DANA, M. D., Diseases of the Mind and Nervous System and Medical Electricity; ALEXANDER J. C. SKENE, M. D., Diseases of Women; ANDREW H. SMITH, M. D., Clinical Medicine and Therapeutics; W. O. MOORE, M. D., Diseases of the Eye and Ear; W. F. FLUHRER, M. D., Clinical Surgery; AMEROSE L. RANNEY, M. D., Applied Anatomy; BACHE McE. EMMET, M. D., Diseases of Women; E. KERSHNER, M. D., Naval, Military, and State Hygiene; W. D. MCKIM, M. D., Operative Surgery.

ASSOCIATE PROFESSORS.—S. M. ROBERTS, M. D., Diseases of Children; W. H. PORTER, M. D., Pathology and Clinical Medicine; H. G. LITTLE, M. D., Genito-urinary and Venereal Diseases; C. A. VON RAMDOHR, M. D., Obstetrics.

LECTURERS.—S. D. POWELL, M. D., Surgical Dressings; S. S. BURT, M. D., Physical Diagnosis; GRAEME M. HAMMOND, M. D., Electro-Therapeutics; J. B. EMERSON, M. D., Ophthalmology; S. J. MCNUTT, M. D., Children's Diseases; N. E. BRILL, M. D., Topographical Anatomy and Development of the Nervous System; F. C. RILEY, M. D., Ophthalmology; J. H. HAWLEY, M. D., and T. KEUNE, M. D., Diseases of Women; G. R. ELLIOTT, M. D., Orthopædic Surgery and Mechanical Therapeutics.

The regular term opened October 1, 1884, and will continue until June 2, 1885. No under-graduates are admitted, but the school is open to all legalized practitioners.

FEES.—Clinical and Orthopædic Surgery and Mechanical Therapeutics, \$20; Operative Surgery, \$20; Diseases of the Nervous System and Electro-Therapeutics, \$20; Anatomy and Physiology of the Nervous System, \$20; Diseases of the Eye and Ear, \$20; Operative Surgery of the Eye, \$15; Diseases of the Nose and Throat, \$15; Pathology, Physical Diagnosis and Clinical Medicine, \$20; Urinary Analysis, \$15; Normal Histology, \$15; Pathological Histology, \$25; Diseases of Children, \$15; Clinical Gynecology, \$30; Clinical Obstetrics, \$10; Venereal and Skin Diseases, \$20; Applied Anatomy of the Nervous System, \$15; of the Eye and Ear, \$5; and of the Throat and Nose, \$5; Practical Pharmacy and Medical Chemistry, \$15; Military, Naval, and State Hygiene, \$20.

For further information address F. R. Sturgis, M. D., Secretary, 226 East Twentieth Street, New York.

Ohio.

CINCINNATI COLLEGE OF MEDICINE AND SURGERY,

CINCINNATI.

FACULTY.—R. C. STOCKTON REED, M. D., Materia Medica, Therapeutics, and State Medicine; J. B. HAIGHT, M. D., Principles and Practice of Medicine; C. A. LEE REED, M. D., Obstetrics and Gynecology; GEORGE B. ORR, M. D., Principles and Practice of Surgery and Clinical Surgery; J. H. HAZARD, M. D., Physiology; JOHN BOHLANDER, M. D., Chemistry and Toxicology; M. L. AMICK, M. D., Anatomy; W. R. AMICK, M. D., Ophthalmology and Otolaryngology; ANDERSON N. ELLIS, M. D., Laryngology; JOSEPH T. WALLINGFORD, M. D., Diseases of Children, and (Adjunct) Midwifery; W. K. BOYLAN, M. D., Materia Medica and Therapeutics; D. W. CLANCEY, M. D., D. D. S., Oral Surgery; JOHN G. REED, M. D., Demonstrator of Anatomy; W. F. TAYLOR, M. D., Dermatology, Genito-urinary and Venereal Diseases.

The fiftieth regular session began September 16, 1884, and will continue until February 28, 1885.

FEES.—General ticket, \$40; matriculation, \$5; demonstrator's ticket (including material), \$10; hospital ticket, \$5; graduation, \$25.

Address J. T. Wallingford, Secretary, 211 Baymiller Street, Cincinnati, Ohio.

MIAMI MEDICAL COLLEGE,

CINCINNATI.

FACULTY.—JOHN A. MURPHY, M. D., Clinical Medicine; E. WILLIAMS, M. D., Ophthalmology, Aural Surgery, and Clinical Ophthalmology; W. CLENDENIN, M. D. (Dean), Descriptive and Surgical Anatomy; WILLIAM H. TAYLOR, M. D. (Secretary and Treasurer), Obstetrics and Clinical Midwifery; THOMAS H. KEARNEY, M. D., Principles of Surgery and Surgical Diseases; J. C. MACKENZIE, M. D. (Registrar), Principles and Practice of Medicine; W. B. DAVIS, M. D., Materia Medica and Therapeutics; BYRON STANTON, M. D., Diseases of Women and Children, and Clinical Gynecology; WILLIAM L. DUDLEY, M. D., Chemistry and Toxicology; N. P. DANDRIDGE, M. D., Genito-urinary and Venereal Diseases; JOSEPH EICHBERG, M. D., Physiology, Clinical Laryngology, and Hygiene; F. W. LANGDON, M. D., Descriptive and Surgical Anatomy.

The twenty-fifth annual course began September 18th, and will continue five months and a half.

REQUIREMENTS FOR GRADUATION.—As usual, except that two courses at certain colleges of dentistry or pharmacy, preceding a course at this college, are accepted, and that courses in practical anatomy and practical chemistry are obligatory; also attendance at a clinical course at the City Hospital.

FEES.—Matriculation fee (annually), \$5; regular lecture term, \$75; graduation, \$25; demonstrator's ticket, \$5; practical chemistry, \$7; practical physiology and histology, \$7; single tickets, \$10; hospital ticket, \$5; special course in operative surgery, including material, \$25.

For further information address W. Clendenin, M. D., Dean, 136 West Seventh Street, Cincinnati.

Oregon.

MEDICAL DEPARTMENT OF
WILLAMETTE UNIVERSITY,

PORTLAND.

FACULTY.—D. PAYTON, M. D., Diseases of Women and Children (emeritus); L. L. ROWLAND, M. D., Physiology and Microscopy (emeritus); R. GLISAN, M. D., Obstetrics (emeritus); WILLIAM H. WATKINS, M. D., Theory and Practice of Medicine; HOLT C. WILSON, M. D., Principles and Practice of Surgery; E. P. FRASER, M. D. (Dean), Diseases of Women and Children; JAMES BROWNE, M. D., LL. D., General and Surgical Anatomy; S. E. JOSEPHI, M. D., Obstetrics and Psychological Medicine; C. H. WHEELER, M. D., Materia Medica and Therapeutics; O. S. BINSWANGER, M. D., P. C., Organic and Inorganic Chemistry; MATTHEW P. DEADY, LL. D., Medical Jurisprudence; F. B. EATON, M. D., Diseases of the Eye and Ear; ALFRED KINNEY, M. D., Genito-urinary Diseases; K. A. J. MACKENZIE, M. D., Clinical Medicine and Surgery.

The nineteenth annual course of lectures will commence November 3, 1884, and will continue twenty-two weeks. "Unless already a matriculate of the university, or a graduate of some respectable college, academy, or high school, every candidate shall be examined as to his previous education, and to his fitness for entering upon and appreciating the technical study of medicine." Women are admitted.

REQUIREMENTS FOR GRADUATION.—One course in dissection, besides the usual requirements.

FEES.—Course of lectures, \$120; matriculation, \$5; demonstrator's ticket, \$10; graduation, \$30.

For further information address Professor E. P. Fraser, Dean, Portland, Oregon.

Pennsylvania.

UNIVERSITY OF PENNSYLVANIA,

DEPARTMENT OF MEDICINE,

PHILADELPHIA.

FACULTY.—JOSEPH LEIDY, M. D., LL. D., Anatomy; HENRY H. SMITH, M. D., Surgery (emeritus); RICHARD A. F. PENROSE, M. D., LL. D., Obstetrics and Diseases of Women and Children; WILLIAM PEPPER, M. D. (Provost), Theory and Practice of Medicine and Clinical Medicine; D. HAYES AGNEW, M. D., LL. D., Surgery and Clinical Surgery; WILLIAM GOODELL, M. D., Clinical Gynecology; JAMES TYSON, M. D. (Secretary), General Pathology and Morbid Anatomy; HORATIO C. WOOD, M. D., Materia Medica, Pharmacy, and General Therapeutics; THEODORE G. WORMLEY, M. D., LL. D., Chemistry and Toxicology; JOHN ASHBURST, Jr., M. D., Clinical Surgery; HARRISON ALLEN, M. D., Physiology; W. F. NORRIS, M. D., Ophthalmology; G. STRANBRIDGE, M. D., Otolaryngology; LOUIS A. DUHRING, M. D., Dermatology.

A preliminary examination is required of all who are not matriculates of a recognized college or have not been examined by a county medical society in a manner referred to in the action of the Medical Society of the State in 1878.

Matriculates who do not furnish evidence of sufficient preliminary education are required to pass an examination in English and Physics, and to attend three graded winter courses of instruction of *seven* months each, consisting of didactic lectures, clinical lectures, and practical work in laboratories and hospitals.

The preliminary course opened September 15th. The annual winter session began October 1st.

REQUIREMENTS FOR GRADUATION.—These do not differ materially from those of the majority of schools.

FEES.—Matriculation, \$5; each annual course, \$150; dissecting material, \$1 a "part." There is no graduation fee. Six free scholarships are obtainable by competitive examination.

The school has its own hospital. Address Dr. James Tyson, Secretary, box 2838, Philadelphia.

JEFFERSON MEDICAL COLLEGE,

PHILADELPHIA.

FACULTY.—ELLERSLIE WALLACE, M. D., Obstetrics and Diseases of Women and Children (emeritus); J. M. DA COSTA, M. D., Practice of Medicine; WILLIAM H. PANCOAST, M. D., General, Descriptive, and Surgical Anatomy; ROBERTS BARTHOW, M. D., LL. D. (Dean), Materia Medica and General Therapeutics; HENRY C. CHAPMAN, M. D., Institutes of Medicine and Medical Jurisprudence; SAMUEL W. GROSS, M. D., Principles of Surgery and Clinical Surgery; JOHN H. BRINTON, M. D., Practice of Surgery and Clinical Surgery; THEOPHILUS PARVIN, M. D., LL. D., Obstetrics and Diseases of Women and Children; WILLIAM THOMSON, M. D., Ophthalmology (honorary); J. SOLIS COHEN, M. D., Laryngology (honorary).

The preliminary session began September 15th. The sixtieth course of lectures began October 1st, and ends the last of March. The spring session begins early in April, and closes in June. The college has a hospital of its own.

FEES.—Matriculation, \$5; full course of lectures, \$140; dissection, \$10; graduation, \$30.

For further information address Professor Roberts Barthow, Dean, at the college, Tenth Street, between Chestnut and Walnut Streets, Philadelphia.

PHILADELPHIA POLYCLINIC AND COLLEGE FOR GRADUATES IN MEDICINE.

FACULTY.—THOMAS G. MORTON, M. D., Clinical, Operative, and Orthopædic Surgery; J. SOLIS COHEN, M. D., Diseases of the Throat and Chest; JOHN B. ROBERTS, M. D., Applied Anatomy and Operative Surgery; CHARLES H. BURNETT, M. D., Diseases of the Ear; CHARLES K. MILLS, M. D., Diseases of the Mind and Nervous System; HENRY LEFFMANN, M. D., Clinical Chemistry and Hygiene; ARTHUR VAN HARLINGEN, M. D., Diseases of the Skin; EDWARD L. DUEB, M. D., Obstetrics and Diseases of Women and Children; GEORGE C. HARLAN, M. D., Diseases of the Eye; J. HENRY C. SIMES, M. D., Genito-urinary and Venereal Diseases; FREDERICK P. HENRY, M. D., Pathology and Microscopy; WASHINGTON H. BAKER, M. D., Obstetrics and Diseases of Women and Children (Adjunct).

Clinical and practical instruction in the medical and surgical specialties is afforded, to physicians only, during the entire year.

In addition to the clinical facilities of the dispensary and domiciliary out-patient department of the College, the professors utilize, for purposes of instruction, their services in the Philadelphia, Pennsylvania, Wills, Howard, Episcopal, Orthopædic, Presbyterian, German, and St. Mary's Hospitals.

The fee for each branch, per session of six consecutive weeks, is \$15. Any two branches, \$25. Any number of branches may be taken. Pupils, after studying in all departments, may, by examination, become Fellows of the College.

For full announcements, address John B. Roberts, M. D., Secretary, 1118 Arch Street, or at the College Building.

Vermont.

MEDICAL DEPARTMENT OF THE UNIVERSITY OF VERMONT.

BURLINGTON.

FACULTY.—WILLIAM DARLING, M. D., F. R. C. S., General and Special Anatomy; JOHN ORDRONAU, M. D., LL. D., Medical Jurisprudence (emeritus); ALBERT FREEMAN, A. KING, M. D., Obstetrics and Diseases of Women; HENRY DWIGHT HOLTON, M. D., Materia Medica and Therapeutics; JAMES LAWRENCE LITTLE, M. D., Principles and Practice of Surgery; ASHBEEL PARMELEE GRINNELL, M. D. (Secretary), Theory and Practice of Medicine; RUDOLPH AUGUST WITTHAUS, M. D., Chemistry and Toxicology; J. HENRY JACKSON, M. D., Physiology and Microscopic Anatomy.

The regular term opens the first Thursday in March of each year, and continues seventeen weeks.

FEES.—Matriculation (each term), \$5; course of lectures, \$70; graduation, \$25. Students who have already attended two full courses of lectures in other regular schools are admitted on paying the matriculation fee and \$25. Theological students are admitted on general ticket by paying the matriculation fee.

For further information address A. P. Grinnell, M. D., Secretary, Burlington, Vt.

* * * We regret that lack of space compels us to omit a number of colleges, for which we had prepared matter based upon the lists given in our Students' Number last year, not having received from most of them announcements for 1884-'85.

NEWS ITEMS, ETC.

The New York Post-Graduate Medical School and Hospital opened its regular winter session on the 1st inst. During the summer the building occupied by the school has been improved, and much has been done to increase the facilities for teaching and to add to the comfort of the classes. Among other noteworthy additions is that of a photograph gallery for taking pictures of important cases. The lecture, operating, anatomical, and other rooms are commodious, and are fitted up with the appliances necessary for teaching the branches to which

they are devoted. The two upper floors of the building are devoted to hospital purposes.

During the session just opened the following clinics will be given: Diseases of the Eye and Ear; Nose and Throat; Skin and Venereal Diseases; Physical Diagnosis; General Medicine; Obstetrics; Gynecology; Surgery—General, Operative, and Orthopaedic, with Surgical Dressings; Urinary Analysis; Histology; Pathology; Diseases of the Nervous System, with Anatomy and Physiology of the same; Applied Anatomy and Genito-urinary Diseases.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending September 30, 1884:

DISEASES.	Week ending Sept. 23.		Week ending Sept. 30.	
	Cases.	Deaths.	Cases.	Deaths.
Typhus	0	0	2	0
Typhoid Fever.....	44	11	57	12
Scarlet Fever.....	17	1	25	2
Cerebro-spinal meningitis....	5	4	3	2
Measles	16	5	17	4
Diphtheria.....	33	17	28	12

The Health of Naples.—A medical gentleman has suggested to us that the present is a good time to "see Naples and die."

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from September 21, 1884, to September 27, 1884:*

MIDDLETON, PASMORE, Major and Surgeon. Having reported from sick leave of absence, assigned to duty at Fort Leavenworth, Kan. Par. 2, S. O. 188, Headquarters Department of the Missouri, September 19, 1884.

WHITE, R. H., Captain and Assistant Surgeon. Assigned to duty as Post Surgeon at Fort Winfield Scott, Cal., relieving Assistant Surgeon A. S. Polhemus, who, upon being relieved, will report to commanding officer at Alcatraz Island, Cal., for duty. Par. 1, S. O. 113, Headquarters Department of California, September 19, 1884.

HALL, JOHN D., Captain and Assistant Surgeon. Assigned to duty at Fort Townsend, Washington Territory, to relieve Surgeon R. S. Vickery. Surgeon Vickery, on being relieved, directed to report to commanding officer at Vancouver Barracks, Washington Territory, for duty. Par. 3, S. O. 140, Headquarters Department of the Columbia, September 15, 1884.

TESSON, L. S., Captain and Assistant Surgeon. Directed to report to commanding officer at Fort Stockton, Tex., for temporary duty. Par. 3, S. O. 127, Headquarters Department of Texas, September 22, 1884.

BIRMINGHAM, H. P., First Lieutenant and Assistant Surgeon. Leave of absence extended twenty days. Par. 2, S. O. 116, Headquarters Division of the Missouri, September 22, 1884.

MADDOX, T. J. C., First Lieutenant and Assistant Surgeon. Directed to report to commanding officer, post of San Antonio, Tex., for duty. Par. 5, S. O. 127, Headquarters Department of Texas, September 22, 1884.

BARROWS, C. C., First Lieutenant and Assistant Surgeon. Leave of absence extended one month. Par. 6, S. O. 97, Headquarters Division of the Pacific, September 19, 1884.

DIETZ, W. D., First Lieutenant and Assistant Surgeon. Assigned to duty at Fort Selden, N. M. (Post Surgeon). Par. 4, S. O. 187, Headquarters Department of the Missouri, September 18, 1884.

McCaw, W. D., First Lieutenant and Assistant Surgeon. Assigned to duty as Post Surgeon, Fort Craig, N. M. Par. 5, S. O. 187, Headquarters Division of the Missouri, September 18, 1884.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending September 27, 1884:*

BLOODGOOD, D., Medical Inspector. Ordered to Washington for examination preliminary to promotion, and as to qualifications for sea duty, October 1, 1884.

HORD, W. T., Medical Director. Detailed as member of Naval Examining Board, October 1, 1884.

TURNER, T. J., Medical Director. Detailed as member of Naval Examining Board, October 1, 1884.

BOYD, J. C., Passed Assistant Surgeon. Placed on waiting orders, September 25, 1884.

OBERLY, A. S., Surgeon. Ordered to Washington for examination preliminary to promotion, and as to qualifications for sea duty, October 1, 1884.

Society Meetings for the Coming Week:

MONDAY, October 6th: Medico-Chirurgical Society of German Physicians; Morrisania Medical Society (private); Brooklyn Anatomical and Surgical Society (private); Utica, N. Y., Medical Library Association; Monmouth County, N. J., Medical Society (Freehold); Union County, N. J., Medical Society (Elizabeth).

TUESDAY, October 7th: New York Neurological Society; Medical Society of the County of Broome, N. Y. (annual); Elmira, N. Y., Academy of Medicine; Medical Society of the County of Columbia, N. Y. (Hudson); Buffalo Medical Association; Medical Society of the County of Orange, N. Y. (semi-annual—Goshen); Ogdensburg, N. Y., Medical Association; Medical Association of Northern New York (annual—Malone); Medical Society of the County of Schoharie, N. Y.; Croton, N. Y., Medical and Surgical Union (quarterly—Katonah); Hudson County, N. J., Medical Society (Jersey City).

WEDNESDAY, October 8th: New York Pathological Society; The American Microscopical Society of the City of New York.

THURSDAY, October 9th: Harlem Medical Association of the City of New York; Public Health Association of New York; New York Laryngological Society; Brooklyn Pathological Society; Medical Association of the Eastern District of Brooklyn.

FRIDAY, October 10th: Yorkville Medical Association (private); Medical Society of the Town of Saugerties, N. Y. (anniversary).

Miscellaneous.

MEDICAL STUDY IN GREAT BRITAIN, FRANCE, AND GERMANY.

THE number of American medical men who go abroad for the purpose of study is at present so large, and the number who desire to know the advantages to be secured by such a trip is so rapidly increasing, that a few facts regarding medical work in Europe may be of interest to many. Each country has its own method of medical education, its own hospital system, its own peculiarities of study and work. These are as different from one another as they are from our own. The chief characteristics of the various systems must be learned in order that the student may decide intelligently under which he can secure the results desired. The information which is here offered has been collected by

the writer during the past year while studying abroad. It is such as he desired to obtain before starting, and, if it aids others, his purpose will be accomplished.

Great Britain.—Although the medical schools of Great Britain are very numerous, and are to be found in many cities of England, Scotland, and Ireland, the traveler will find that medical interest centers in London, Edinburgh, and Dublin. In these cities are found the great hospitals which afford material for practical instruction, and the most eminent teachers whose names attract large numbers of students. There is no rigid system of government control over medical education in Great Britain as there is upon the Continent; and, as a result, the schools are numerous in each city and are in constant competition. In London many of the hospitals have medical schools connected with them, and, as the number of students in each school is small, rarely exceeding two hundred, they have access to the hospital and obtain much practical information by the examination of cases. As in America, instruction in the schools is given by lectures and by clinics, but, in addition to this, the English student has an opportunity to obtain more than an abstract knowledge of disease, for every man is obliged to serve as dresser or clerk in a hospital for six months before graduation. While clerk he has access to the hospital wards for three hours daily; he takes the history of every case assigned to him, makes his examination and diagnosis, and reports both to the house physician and to the attending physician at the time of the rounds. In each division of a hospital there are about sixty beds, and from ten to fifteen clerks are in attendance, so that no man has more cases than he can work up thoroughly. When the attending physician visits the wards all the clerks accompany him, and each is questioned, more or less carefully, about his cases, interesting features of them are called to his notice, his diagnosis is discussed and corrected if necessary, and he is asked to recommend a line of treatment. The history which the clerk writes is reviewed by the house physician and then copied into the hospital records by the author. A dresser has somewhat similar duties under the direction of the house surgeon, and assists him in the application of dressings. This system requires a sacrifice of time on the part of the attending physician or surgeon, but, as he regards the instruction given in the wards as part of his duty as professor in the hospital school, it is not grudged. The benefit derived by the students by such a practical experience in the care of patients is very great. It gives him a familiarity with disease which could never be obtained from theoretical lectures or ordinary clinics.

A foreigner may obtain a position as clerk or dresser in a London hospital by appointment or by application, but not as a rule now. At some of the hospitals the professors choose their own clerks—and a personal introduction will secure a position—if the applicant is willing to await his turn. In other hospitals (St. Bartholomew's and Guy's) a dressership or clerkship may be purchased, the price being ten guineas for a three months' service, and fifteen guineas for six months. At Guy's Hospital one hundred and sixty clerks and dressers are appointed yearly, and at St. Bartholomew's and the London Hospital the number is almost as large.

The public clinics and operations at the hospitals are usually held at two in the afternoon, and to these no introduction is necessary. If a stranger wishes to visit any of the hospitals he should ascertain at what hour the rounds are made, and at that time, on presentation of his card to the attending physician or surgeon, he will be invited to accompany him through the wards. He can then see the working of the system of practical instruction just described, as well as the arrangement of the hospital, the class of cases treated, and the methods of treatment. At other times of the day the cordiality of his reception will depend largely upon the good nature of the house surgeon or physician to whom he applies, and who may be too busy to be troubled by visitors.

The term time in the English schools corresponds very nearly with that in our own, and lectures or clinics can not be attended to advantage between May and October. The summer session, lasting during May and June, is conducted largely by assistants. Hospital work, of course, continues during the entire year.

The character of instruction in English schools is very similar to that in our own, the best talent in the profession being devoted to the work of teaching. At King's College, Lister, Playfair, Ferrier, G. John-

son, and Beale; at the London Hospital College, Andrew Clark, Hutchinson, and Hughlings Jackson; at St. Thomas's Hospital, Bristowe and Croft; at the University College, Sir Henry Thompson, Heath, Barlow, Fox, and Gowers; at St. Bartholomew's, Sir James Paget and Gee—deliver lectures and hold medical or surgical clinics. Specialists are not in favor in England, and therefore special study is best conducted on the Continent; although, if the specialist has letters of introduction to English physicians, he will be shown every attention and be able to do a good deal of work in almost any department. The material in the hospitals and dispensaries in London is, of course, enormous, but it is not as available for the specialist as that in Vienna. If one desires, for example, to study diseases of the throat, he will find the clinic of Dr. Mackenzie, at the London Hospital, open twice a week, and two or three dispensary classes held for an hour every other day, whereas in Vienna he can spend six or eight hours daily in courses upon this department of medicine. And the same is true of almost every other. Sir James Paget, Sir Henry Thompson, Sir Joseph Lister, and others operate once a week before their classes. The clinics of Billroth or Albert may be attended for three hours every day. English methods of study, of teaching, of operation, are very similar to our own, as every one knows who reads the English journals; and the medical man abroad will find more that is new and suggestive on the Continent than he will in London.

The Edinburgh school attracts many students on account of the special facilities it offers for pathological work in its laboratories, and on account of its eminence in the departments of obstetrics and gynecology under the leadership of Simpson and Keith. The lectures of Grainger Stewart in general medicine and his fine clinics, and the operations of Cheyne in the surgical wards of the large hospital, contribute largely to the success of the school and to the high reputation which it has abroad as well as at home. The instruction is as practical in Edinburgh as is possible in any country where the chief end of a hospital is not the teaching of students. But, as the Edinburgh students find it to their advantage to complete their studies in Vienna, it will be better for the American to limit his stay in the former city with the view of having more time in the latter.

Few foreign physicians go at present to Dublin. The chief attractions there for many years were the obstetric out-door service in connection with the school, and the large clinic in children's diseases. There are at present in Dublin about fifteen hundred cases of confinement divided among eighty students in the course of a term. In Vienna ten thousand infants are born annually in the obstetric division of one hospital, which is accessible to any practitioner. And the number of cases of children's diseases treated at the Poliklinik in Vienna is as great as that in any dispensary in Dublin.

If a student can not afford to spend time in acquiring French or German, and desires to study in Great Britain, he will do well to pursue pathology, obstetrics, and gynecology in Edinburgh, and all other branches in London. But he will find that he will obtain very little more in these places than he could obtain in an equal time in New York. A few Americans aspire to an English degree. There are nineteen colleges in Great Britain which confer the degree of M. B., which entitles one to practice. The degree of M. D. is an honor not taken by the majority of practitioners. The Royal College of Physicians and the Royal College of Surgeons hold quarterly examinations for their degrees, which are open to American graduates who have pursued a four years' course of study. The examinations are both written, oral, and practical, the latter being conducted in the wards of one of the hospitals. The necessary qualifications may be ascertained and old examination papers may be seen at the Royal College of Physicians on Trafalgar Square, or at the Royal College of Surgeons in Lincoln's Inn Fields. A student who has taken his degree in one of the colleges of this country, and has served two years on a hospital staff, will find some difficulty in passing any of these examinations, and will be likely to estimate the value of the English diploma very much above his own.

One of the best methods of seeing and hearing the distinguished medical men in any city abroad is to attend some of the meetings of their societies. These are held weekly in the evening, in London, and admission is granted upon presentation of one's card at the door. The personal characteristics of the chief members of the profession are more

clearly seen when they are engaged in a discussion with one another than when they are lecturing to their students; and no one can fail to be interested in following an animated debate, aside from the attraction which is frequently offered by the subject under discussion. The meetings of the Pathological, the Medical, and the Medical and Chirurgical Societies are always crowded by the best men in London; and at all of them the foreigner will be sure to meet with a cordial reception if he is personally known to a member.

The hospitals and schools are so widely scattered over London, and are at such distances from each other, that no one part of the city can be suggested to the student for a place of residence. In Bloomsbury he will have no difficulty in finding apartments at a reasonable rate, and will be near the University College Hospital and the Soho Square Hospital. Guy's and St. Bartholomew's are at the East End, and lodgings near them are not desirable. In the streets off the Strand the student can find numerous boarding-houses and be within a few minutes' walk of King's College and Charing Cross Hospital. But the numerous omnibus lines make it a matter of indifference where one is located.

The cost of living in London is about the same as in New York. The best plan to pursue is to take an apartment and live in restaurants, in this way avoiding the necessity of returning from a distance to a boarding-house at meal time. Where one's own language is spoken there is little difficulty in obtaining all the necessary information after one's arrival, and the stranger needs less advice with regard to study in England than upon the continent.

France.—"Paris c'est la France" is true of medical matters as well as of all others. The chief medical college of the country, the great hospitals, the extensive and well-equipped laboratories, the enormous library and museums, the societies, the academy—are all to be found within the city limits. The most able men of France are brought together in the institutions of instruction in the capital, and to them flock students from all over the world. This is one point of contrast to the German system, under which many universities compete for favor. In Paris all the institutions are under government control, and one feature which impresses the stranger is that the national motto, "Liberté, égalité, fraternité," placed over their doors, seems to have its meaning enforced, for there is free admission to every institution, and the foreigner is welcomed everywhere and given all the advantages of the citizen. In the School of Medicine instruction is both theoretical and practical, and the true balance between the two is more nearly attained in Paris than elsewhere, the tendency in England, as in America, being to exalt theoretical lectures, and in Germany to make all teaching clinical. Specialties are not so sharply defined as in Germany, and few of the Parisian lecturers or practitioners desire to be known as specialists. The chief feature of the French school of to-day is its excellence in anatomical work, and no one can succeed in Paris unless he is a thorough anatomist. Next in prominence are the departments of surgery and neurology, and these are the favorites with students from other countries; but in all branches instruction is complete. These are, perhaps, the chief general characteristics which impress the foreigner.

The School of Medicine, situated in the Latin quarter near the crossing of the Boulevards St. Germain and St. Michel, may be taken as the medical center of Paris, and it is in this region that a student will find it convenient to live. He can obtain a furnished room in some of the many hotels in that vicinity for from 40 to 100 francs a month, according to the degree of comfort sought. His coffee and eggs will be served in his room for one franc, and he can obtain his noon breakfast (1.50 to 2.50 francs) and evening dinner (2.50 to 5 francs) in some one of the numerous good restaurants either in the Latin quarter or wherever he may find himself at meal-time. This is the best way to live in Paris as well as in London. This location is also desirable as it is central and about equally distant from the chief hospitals which most men visit, and to it many omnibus-lines converge. In the School of Medicine the theoretical lectures are given. In the school are the Musée Orfila, with its enormous collection of anatomical preparations and the great medical library, where one can find all medical books of any worth in any language as well as many of the French, German, and English periodicals. This library is open to any medical man free of charge from eleven to five and seven to ten. Near the school is the

building containing the celebrated Musée Dupuytren of pathological specimens, and in which are held the meetings of the Société de Biologie and the Anatomical Society. The École Pratique, or anatomical laboratory, is also in this vicinity. It is therefore desirable to live near the school. The medical courses open to a student are of three kinds: The didactic lectures, the laboratory work in anatomy or physiology, and the clinical courses in the hospitals. There are two terms in the schools during the year, the winter term beginning in October and lasting till March, and the summer term beginning in April and lasting till August. During the winter term the lectures are delivered by the professors, but in the summer the assistants take their places in some of the departments. Each professor lectures two or three hours a week. Each course covers a portion of the department which the professor holds, and thus it requires sometimes three or four years for him to get over his entire field. As the student is required to pursue a four years' course, he does not thereby lose any part. Among the lecturers are Sappey, Vulpian, Jaccoud, Péter, Hayem, Le Fort, Simon, and Charcot, in addition to a score of others whose names are less widely known. The lectures are accompanied by demonstrations whenever these are possible. The student will see fine dissections or difficult physiological experiments carried on with surprising facility by the aid of numerous skilled assistants while the lecturer is describing them, and operations performed on the cadaver as they are being explained. The chief feature of the lectures is their thoroughness, each subject being carefully dealt with and exhausted before it is left. Many of the lecturers attend at some large hospital, and their daily morning visit is always open to the student. In fact, students are required to follow the rounds of some professor in the hospital daily during the last two years of study, being allowed to make a selection of the professor at the beginning of each term. This enables a professor to combine practical with theoretical instruction. For example, M. Péter was lecturing in April last on diseases of the alimentary canal. Every morning at nine he made his rounds in la Charité attended by thirty or forty students, and took occasion to call their attention to any case which illustrated his lectures. This was done in a conversational manner, so that students did not hesitate to ask any questions they desired, being always sure of a considerate reply. They were then allowed to examine the patients for themselves when the patient was not too sick, under the direction of some member of the house staff. A stranger can attend any of these hospital visits as well as the didactic lectures, either joining the students as they follow the professor, or securing more special notice by the presentation of his card before the rounds begin. Some courses are wholly clinical. The professor meets his class at his hospital, and, after making his rounds, has a patient taken to an amphitheatre, and spends an hour in lecturing on his case. This method is followed by G. Sée, Vulpian, and Hardy. The art of lecturing is cultivated largely in Paris, it being a part of every examination of a student or of a candidate for a hospital or college appointment to deliver a ten minutes' lecture on a subject after ten minutes' preparation. This secures facility in giving a concise statement of a case, a quick differentiation, a definite diagnosis, and a terse outline of treatment. As every student aspires to the position of hospital externe, every externe desires to become an interne, and many internes contend for positions as assistant professors; and, as every step in the progress is made to depend on an examination in which the extemporaneous lecture plays an important part, the attention paid by both students and hospital staff to these lectures is very close, and, as a rule, all take full notes of the lecture. In surgery the lectures are supplemented by courses in operations on the cadaver, and by the surgical clinics at the hospitals. The laboratory work is probably the most perfect in Europe. Every student has to work in the dissecting-room daily during the winter semesters of the second and third year, absences being marked against him. During the first year students are obliged to do practical work in the laboratories of chemistry, physics, and natural history. And in the fourth year attendance upon operative surgical courses is also enforced. Thus practical work is made of the greatest importance. The facilities offered for it are very complete. The École Pratique, in the Rue Vauquelin, consists at present of a set of eight pavilions, each hall affording room for fifteen tables, being well ventilated and lighted. To each pavilion are assigned one prosector and three assistants, whose duty it is not

only to demonstrate to those who are dissecting, but also to deliver regular lectures. The prosector lectures three times a week, and each assistant once a week; during these lectures the students stop work and listen. The whole laboratory is under the direction of Dr. Fara-bœuf, who is present every day to direct and stimulate the work of assistants and students. He goes about from table to table asking questions of the students or suggesting points of interest, or listening to the lectures which are going on. Owing to his pleasant manner, the relation in which he stands to the students is a particularly agreeable one, and is calculated to further their interest in their work and to lead them to desire to win his commendation. The students in the dissecting-room are divided into two classes, according to their year of study, and their course in dissection is a progressive one and exceedingly minute. During the last semester over five hundred were dissecting daily. The courses on operative surgery for the fourth-year men, which are held in the same building, are also admirable. The lectures are given daily, each operation being minutely described and performed with great care on the cadaver, models, diagrams, and dissections being used to illustrate every point. Each student pays forty francs a year for the use of the laboratory, and material is furnished him free. Prizes are offered for fine dissections, and some of the most remarkable preparations in the museums have been made by students in competing for these prizes. No one can remain in Paris a month without appreciating the advantages of this careful training in anatomy. And the importance of anatomical knowledge is emphasized by making it the chief subject for examination for all degrees or positions. The physiological and pathological laboratory are no less complete in equipment, and are directed by competent "chefs de travaux," each of whom has numerous assistants. But the chief interest concentrates upon the dissecting-room. There are also laboratories for special work in each department, to which any one who desires to make special study can obtain access, and in which all appliances are furnished him for work. For the use of the hospital internes and externes of Paris there is a special laboratory, the Amphithéâtre d'Anatomie, supported by the government, where special work can be done. There are here twenty tables for dissection, and a large room for microscopic and chemical work. The numerous facilities for anatomical investigation and the avidity with which they are taken advantage of are an index of the general interest in the subject. As surgery is founded on anatomy, it is not strange that it stands second in the list of departments in which the Paris school excels. For the student the courses are very complete, and for the practitioner the opportunities for seeing operations are many and very satisfactory. The clinics of Le Fort, Gosselin, Richet, Verneuil, and Trélat are crowded with students, who have the opportunity of seeing as careful and brilliant operations as those held in any part of the globe.

The name most frequently heard in Paris is that of Charcot, and no description of the medical instruction of the city would be complete which did not include that of his course. His lectures and clinics are held at the Hôpital Salpêtrière, near the Jardin des Plantes. This is an enormous almshouse for women, with a division devoted to nervous diseases. There are in all about four thousand inmates, of whom at least six hundred are invalids. An out-door department for the treatment of nervous diseases, which is attended by Charcot, Luys, Legrande du Saulle, and others, attracts a large number of patients, from whom the wards are kept filled. Each physician attends at the out-door department one day in the week, in the morning, to examine such cases as are selected by the assistants as of peculiar interest. These consultations, as they are called, are open to practitioners, and are worth attending. The patient is brought into the office and examined, and the case is talked over in a conversational way by the attending physician and the assistants, and the diagnosis and treatment discussed. Charcot attends on Tuesday, and usually sees eight or ten cases, going over each carefully. These consultations are less formal than his clinics, and are more valuable to the practitioner, as he there has an opportunity to see the method of examination, the care in differentiation, and the fine diagnostic acumen which have made Charcot renowned. Patients come not only from all parts of Paris, but from distant cities, to these consultations, so that there is no lack of remarkable cases.

On Wednesday, Charcot makes his rounds publicly, and shows to students the interesting cases in his wards. On Friday, at 9 A. M., he gives his weekly lecture in the celebrated amphitheatre of la Salpêtrière, with its stage and rising banks of seats arranged like a theatre. This hall is darkened during the lecture, so that, by means of a brilliant calcium light, diagrams and photographs can be displayed upon the screen.

With a large material to draw from, Charcot can illustrate by cases every form of nervous disease, and, when a differentiation between apparently similar conditions is necessary, the patients can be compared and contrasted. Various stages of the same disease are shown in different patients; and, with a clearness and precision which are striking and a minuteness of detail which is characteristic, the course of the malady is illustrated from its beginning to its close. Then, by the aid of the calcium light, microscopic sections are magnified and thrown upon a screen, and the lesion in brain or cord is demonstrated, thus bringing the symptoms and pathology into a relation which is not soon forgotten. As one listens to the fluent lecturer, and notes how every portion of his subject is given its appropriate degree of importance, how the strong diagnostic points are set in relief without any sacrifice of detail, and how the entire subject is summed up in a few terse sentences at the end, one can not wonder that hundreds of hearers gather from every country to sit under his teaching, and that they come away convinced that his brilliancy is unsurpassed.

In connection with his division of the hospital, Charcot has several laboratories for physiological and pathological work, and in them there are always a number of enthusiastic young men working under his guidance. Here one can see every modern device for the examination of diseased patients, or the investigation of deceased specimens, in daily use. In the photographic department series of instantaneous pictures were being taken of patients in epileptic or hysterical convulsions. In the modeling department casts of limbs in the various forms of contracture from different causes were being made. In one room patients were tested for color-blindness, and their visual fields for various shades carefully marked on the diagrams. In another, all the electrical apparatus was collected, and patients were being treated, some by static electricity produced by an enormous Holtz machine operated by steam, some by galvanism, and others by the induced current. The hydropathic establishment is the most complete in Paris. A large museum is devoted to one of the most interesting collections of pathological specimens in Europe, and on its walls hang photographs of the patients from whom the specimens were obtained. Not the least interesting is a series of engravings of celebrated pictures in various galleries of Europe, all of which represent the miraculous cure of demoniacs, and illustrate perfectly the fact that epileptic and hysterical seizures were faithfully studied by artists in past centuries, and were accurately represented on canvas.

For completeness of equipment and for facilities for studying the pathology of nervous diseases, no laboratory in Europe can compare with that of Charcot, and, if one desires to pursue this specialty, he should not fail to spend a portion of his time under the inspiration of the great Frenchman.

Next, perhaps, to Charcot in popularity is Legrande du Saulle, whose weekly lectures on insanity attract large audiences. His clinics are supplied with patients from his division of the hospital, where idiots, epileptics, and insane are to be cared for. A visit to his school for idiots, where every known method of developing any latent faculty is employed, and where most encouraging results are obtained, should not be omitted. Permission will be readily granted by the professor, who takes such pride in the institution that he gladly shows it to any stranger who manifests an interest in the subject.

To the alienist the clinics of Professor Ball, at the Asile Ste. Anne, and the daily rounds of Dr. Magnan at the same institution, will be of interest, especially as he will there see the working of the principle of non-restraint. This asylum is one of the largest and most admirably arranged in France, and merits a visit aside from the interest of the teaching given. It is reached by an omnibus going along the Boulevard St. Michel to the Place St. Jacques.

The study of the diseases of children can be pursued in Paris to great advantage. At the Hôpital des Enfants Malades there is a daily

attendance in the out-door department of between two and three hundred children, and Simon and Bouchut hold clinics. In the hospital there are 618 beds, and every form of disease can be watched by attending the daily rounds. This hospital is in the Rue de Sèvres, No. 149, very near the Hôpital Necker, where Potain and Guyon hold their university clinics. A second large children's hospital (320 beds) is the Hôpital des Enfants Amitées, Rue d'Enfer, 74, a founding asylum where Parrot makes daily rounds and holds his clinic. Here, too, is a large out-door department. At both these hospitals one can see autopsies, if a request is made to the house physician. Their fever wards are always full, and are alone worth a visit.

Though there are numerous lying-in hospitals in Paris, the study of obstetrics can not be pursued to so great an advantage as in Vienna, it being difficult for a foreigner to obtain permission to practice in the wards, and the number of cases falling to one's lot being small.

For one who is already familiar with diseases of the skin, the Hôpital St. Louis (near the Station de l'Est) offers an enormous material for study. It has 823 beds, and a very complete hydropathic establishment. Here the clinic of Fournier on skin and syphilis is held once a week, and the rounds may be made with him every day. Besnier's lectures are also much esteemed by those who attend this hospital. In the out-door department no less than 28,000 patients are treated every year, and one can see every variety of skin disease in every stage. The time devoted to each case is necessarily limited when so many apply, and there is little opportunity to obtain any explanation of the cases. But, if one is familiar with skin diseases, the variety is an attraction. These are the chief hospitals for specialties in Paris.

The disadvantages of study in Paris are owing to the facts that the hospitals are so widely separated and that all the visits of the physicians are made at the same hour. One is therefore unable to make more than one visit daily. At most hospitals the professors hold a clinic after their rounds, twice a week. It is best to ascertain the days selected for this clinic, and attend the different hospitals on those days. In this way one can visit three hospitals a week with some regularity, and devote the other days to going to special hospitals. The Hôpital de la Charité (Péter, Hardy, and Gosselin) in the Rue Jacob, 47; the Hôtel Dieu (G. Sée, Le Fort, and Vulpian), near Notre Dame; the Hôpital Lariboisière (Jaccoud and Duplay), near the North Station; the Hôpital Necker (Potain, Trélat, and Guyon); the Hôpital St. Antoine, in the Faubourg St. Antoine (Dieulafoy, Hayem, and Dujardin-Beaumetz), are all large hospitals, with five hundred to eight hundred beds, and offer a large material for study. If one desires to learn the methods of a particular man, it is best to attend that man's visits several times a week, and watch his cases, rather than to go from one to another, and miss the individual methods of each. By attending a visit in the morning, dissecting or doing laboratory work in the early afternoon, and hearing lectures later, one can make much out of a stay in Paris. If, however, one desires to see special cases only, much time will be lost which could be spent to better advantage in Germany.

An account of the opportunities of work would be incomplete if the private dispensaries of Paris were not mentioned. These are not under the government support, and do not belong to the "*Assistance publique*." They are located in small private houses, sometimes difficult to find, and are usually conducted by specialists. Landolt (Rue St. André des Artes, 10) and Galezowski (Rue Dauphine, 15) have such private clinics near the School of Medicine, where opportunities for studying diseases of the eye are very good. There are also several for treatment of diseases of the throat, diseases of women, etc. Their number and location vary from year to year, but they are usually mentioned with their addresses in the students' number of "*Le progrès médical*," published early in October. In most of these specialties there are weekly classes at the larger hospitals, but, as in London, special work, except in nervous diseases, is done in Paris at a disadvantage and at a loss of time.

It must not be forgotten by a student that lectures are delivered on anatomy and physiology at the Collège de France as well as at the medical school; and, when he learns that Ranvier and Brown-Séquard can be heard twice a week, he will not fail to walk up the Rue des Ecoles and find his way to their lecture-rooms. He will not regret the time spent in the effort, and he will come away convinced that in these sciences progress is constant and rapid.

The medical societies of Paris are numerous, and some are worth a visit. At the meeting of the Société Anatomique, held on Friday at 3 p. m., at No. 15 Rue de l'École de Médecine, the most interesting pathological specimens of the week from the various hospitals are to be seen, and the discussions, led by Cornil, the president, are animated and full of information. At the Société de Biologie, which meets at the same place on Saturday at 4 p. m., some of the most valuable results of original work in physiology and experimental therapeutics are announced by the foremost workers in Paris. Paul Bert is president, and Brown-Séquard, Péter, Bouchut, Bouley, G. Sée, Hardy, and Hayem are constant attendants. The Académie de Médecine (Rue des St. Pères, 39) meets on Tuesday at 3 p. m., and is also attended by prominent members of the profession, and its meetings are full of interest, as remarkable cases are frequently shown. The Société de Chirurgie, Rue de l'Abbaye, 3, Wednesday, at 3.30 p. m., is attractive to those who are watching the progress in surgical science.

The extent and thoroughness of the training obtained by the medical student in Paris have been incidentally shown in this description. The important fact that attendance at the laboratories and at the hospital rounds is obligatory, while the student may attend the lectures or not, as he pleases, deserves a moment's notice. The result of this is seen in the crowded lecture-rooms, for nothing will incite a keener interest in a theoretical lecture than a desire to get from it some information regarding a case under observation.

The examinations in chemistry, physics, and botany occur at the end of the first year; in anatomy, histology, and physiology at the middle or end of the third year, at which time the student has to make a dissection before a prosector; and in the other departments at the end of the fourth year. The final examination is practical as well as theoretical, each student being given a medical, obstetrical, and surgical case to examine for ten minutes, after which he is to give a lecture upon it. The examinations are conducted by three members of the faculty (the names changing daily), and are held at any time that the student may desire, all through the year, each man receiving his diploma after his examination is satisfactorily passed. There is no "commencement day." The number of medical students in Paris is five thousand, a small number being females, who are admitted to all the courses, and are uniformly treated with respect and courtesy. For a foreigner, all the courses are open freely, and there is nothing to pay. To one who visits Vienna before going to Paris, this feature is especially attractive, as the chief reproach to the medical school of the former city is its money-making propensity. In Paris one meets the most generous and courteous treatment, and feels at once at home.

Germany.—The student who starts for Germany in pursuit of medical knowledge may be embarrassed to know where to go. The number of German universities is large, as may be seen from the following list. Each has its medical department fully equipped, and about one quarter of the students are pursuing medical study.

German universities, with the number of students in each during 1883.

Berlin.....	3,900	Königsberg.....	863
Leipzig.....	3,111	Strassburg.....	823
Munich.....	2,017	Marburg.....	766
Breslau.....	1,532	Freiburg.....	721
Tübingen.....	1,400	Greifswald.....	659
Halle.....	1,377	Erlangen.....	575
Würzburg.....	1,091	Jena.....	570
Göttingen.....	1,083	Giessen.....	435
Bonn.....	1,061	Münster.....	326
Kiel.....	381	Rostock.....	217
Heidelberg.....	922		

The selection of one or more of these as places for study must depend entirely upon the object which the student has in view. Many desire to complete their knowledge in several branches of medicine by attending courses of lectures. Others wish to obtain a practical acquaintance with disease by seeing as many cases as possible. A third class go with the object of doing laboratory work in anatomy, physiology, or pathology. And, lastly, there are the specialists, who wish to limit their study to a single department. It is a well-known fact that

general medical study is best pursued in a large city, where the material for clinical instruction afforded by numerous large hospitals and dispensaries is extensive. Hence it is advisable that the first two classes of students should select Berlin or Leipsic as affording the best advantages for their purpose. It must not be supposed, however, that the smaller universities are lacking wholly in facilities for clinical instruction. Every one of them has a hospital containing between five hundred and eight hundred beds, in connection with its medical school. And to this hospital the country people living near the university town apply in large numbers, there being in Germany none of that feeling of reluctance in entering a hospital which is so often displayed by the ignorant classes with us. Even in the small town of Heidelberg there is ample material for the supply of eight clinics daily.

But in a large city there is, of course, a greater variety of cases, and the student can pursue a number of studies at once to greater advantage. The presence of such men at Berlin as Waldeyer and Hartmann in anatomy, Du Bois-Reymond and Munk in physiology, Virchow in pathology, Frerichs and Leyden and Senator in medicine, Schröder in obstetrics, von Bergmann in surgery, and Westphal in neurology, is sure to attract many students. Leipsic comes second with a corps of instructors hardly equaled in any other city. His and Flechsig in anatomy, Ludwig in physiology, Wagner in medicine, and Thiersch in surgery, are all teachers whose names are known wherever medical literature is read. In both these cities the hospital advantages are great and the material very large. The *Charité* in Berlin receives 12,000 patients yearly, and it is in the wards of this hospital that clinical instruction is given by Bardeleben, Frerichs, and Leyden. In Leipsic the new buildings of the medical school are grouped about the large municipal hospital in the south-east corner of the city, and the students can go from the laboratories to the wards with little loss of time. In Munich also, where Nussbaum and von Ziemssen hold daily clinics, the hospital is enormous, covering a large area and having divisions in which every form of disease is to be found. While no one German city stands in the same relation to Germany that Paris does to France, there is no doubt that in most departments of medicine the universities of Berlin and Leipsic lead all others. The student whose time is limited, and who has no special study in view, should choose one of these two places, as they furnish able instruction in all departments. A further attraction in the larger cities is found in the meetings of the various scientific and medical societies, which are well worth attending regularly, on account of the character of their membership and the interest of their proceedings. Probably in no city in Europe is a more notable body of medical men collected than in Berlin, at the medical society presided over by Virchow, where the discoveries of Koch were first announced and where the most accurate pathological discussions are carried on.

Among the smaller universities those of Strassburg and Heidelberg are decidedly the favorites with foreigners. At Strassburg the German Government is making every effort to strengthen the university, and with that end in view new and most commodious laboratories and hospitals have been erected and most able men have been selected as professors. Probably at no place in Germany is more good work done in the laboratories than in Strassburg. The physiological laboratory is directed by Göltz; the pathological work is done under the direction of von Recklinghausen, while Hoppe-Seyler has charge of the department of physiological and pathological chemistry, a subject in which he stands almost alone as a leader. The number of students working in the laboratories is large, but there are ample accommodations for all, and the personal attention given to each by professors and assistants is considerable. The laboratories are open from 8 A. M. to 6 P. M., but, if one desires to devote a part of the day to clinics, he can listen to the lectures of Kussmaul in the hospital, or watch Lieke as he operates in the surgical wards. In Heidelberg also the laboratory work holds a prominent place. Kühne, who ranks with Hoppe-Seyler, has a very large and perfectly equipped institute, and is not only an admirable instructor, but takes a personal interest in those who are working with him in physiology, and stimulates his students by his enthusiasm in his subject. In comparative anatomy few can approach Gegenbaur for thoroughness, and his laboratory attracts many students every year. But it is for pathology that Heidelberg has obtained a deserv-

edly high reputation. The laboratory, a well-arranged and very complete building, standing on the bank of the Neckar, within the hospital grounds, contains every requisite for pathological investigation. It is under the direction of Arnold, who, with his assistant Thoma (the inventor of the celebrated microtome), is always present, ready to assist the student in the details of mounting a specimen, to direct his attention to new lines of investigation, or to encourage him in original work. It is in such a laboratory that one gets rid of that cold reserve which exists too often here between professor and student, and begins to enjoy the relationship of fellow-worker with his instructor, which seems to obtain widely in the German colleges. In this laboratory the student is furnished with pathological material, is taught the technique of cutting and mounting specimens, is shown how to study them thoroughly when mounted, and is given as complete instruction in the subject as can be imparted anywhere. Whether he comes for the purpose of getting a general knowledge of pathology or to study in a special department, such as the structure of tumors or the diseases of some one organ, he will be able to attain his object equally well, and will be sure of individual attention and personal help. All the autopsies of the hospital are made in this laboratory with the students under the direction of Professor Arnold. One didactic lecture is given daily on pathology, and twice a week there is a practical course lasting three hours, during which time specimens are distributed among the class for each man to diagnose, by which means his knowledge is tested. To one who is unfamiliar with such work it offers all the attraction of novelty, and one who has pursued the subject in even the best laboratories at home can not fail to obtain valuable points and new methods. The criticism is often urged that Arnold requires, or desires, men to follow certain fixed lines of study, and does not encourage special and independent work. The advantages afforded for the study of surgery in Heidelberg are also very good. Czerny holds a clinic daily for three hours, and gives also theoretical and operative courses. He controls about one hundred beds in the hospital, and his reputation attracts patients of all classes from the whole of Baden. The medical clinics are now led by Erb and von Deutsch, and are also well supplied with material. Students can have cases in the hospital assigned them to take charge of and watch, with the power of reporting to the professor daily; and obstetrical cases are also given to practitioners in the lying-in asylum. The eye courses under Becker are celebrated, there being a separate ophthalmic hospital under his care. The attractions of Heidelberg as a summer resort add to the pleasure of a semester's work, and account for its holding its place as the favorite among the smaller universities.

The other universities are visited chiefly by specialists, who wish to work under one man on one subject. Thus some go every year to Würzburg to the laboratory of Kölliker or to attend the children's clinic of Gerhardt. To Halle, Volkmann attracts students by his lectures on surgery, his five courses on operations, and his brilliant clinic. Hegar's instruction in gynaecology at Freiburg is spoken of very highly by those who have been with him. The course of Pfüger in physiology at Bonn, and of Henle on anatomy at Göttingen, both in connection with laboratory work, are taken by a few.

The German student has to go through as long and as thorough a course of study as the Frenchman in order to obtain his degree of doctor, and then has to submit to a Staats-Examen almost as severe as his university examination in order to become a legally qualified practitioner. The time spent by most students in preparation is four years, but this is rarely passed in connection with a single university. It is the custom to study at one place during the first two years, and then during the last two to pass one semester each at four universities, and take the degree either from the last or from the first. Many do three years' work in Germany and then spend two years in Vienna, obtaining their degree there.

One of the chief features of the instruction in Germany is the teaching of the Privat-Dozenten. These young men hold subordinate positions in the university or hospital, and are constantly endeavoring by their work to secure the higher places of assistant professors. With this object they form small classes in special subjects, and, by the attractiveness of their lectures, operative courses, demonstrations, or private clinics, seek to draw students and obtain a reputation. It is frequently the case that the course of a Privat-Dozent is more profitable

to the student than that of the professor, and in many universities the lecture-room of the former will be crowded while that of the latter is deserted. To encourage this rising talent many of the universities set apart special lecture-rooms for the Privat-Dozenten, or offer them facilities for clinical teaching by assigning them a division of a hospital. Their number is sufficient to produce much competition for favor, and the rivalry acts as a stimulus to harder work. A professor who is content to repeat the same lectures from year to year, or who fails to keep abreast of the latest progress in his subject, soon finds that the students prefer to hear a more active man, though he may be younger and less experienced. And, as there is no compulsion about attendance at lectures and the students can go where they please, the result is usually that they flock to the better teacher. In every university catalogue it will be noticed that several men are announcing courses on the same subject. It follows, as a matter of necessity, that the competition for students will secure an excellence of instruction that can result only in benefit to both teacher and pupil. A stranger in selecting his courses should always consult some student who has been already at work, for not infrequently he will find that he can gain more from the course of a Privat-Dozent who is comparatively unknown than he can from the instruction of the more celebrated professor. The young teacher knows the wants of the student, his memory of his own needs being fresh, and he does his best to supply them. All the successful professors in Germany to-day have begun as Privat-Dozenten, and there are many Dozenten teaching small classes in small universities who are destined to attain the highest position in a few years. One of the chief reasons why the professors in German universities are so superior is because of their preliminary training as Privat-Dozenten, and the fact that they have been chosen on the principle of the "survival of the fittest." In France all positions are obtained by "concours," and the competitive examination determines every man's advancement. In Germany the vacant positions in a university are filled by appointment made by the Minister of Instruction on recommendation of the faculty of the university. That these faculties are watching the course of the Privat-Dozenten in every university and appreciate merit wherever found may be illustrated by the history of Nothnagel, now professor of clinical medicine in Vienna, and probably the most brilliant medical lecturer in the world. He graduated at Berlin in 1863. From 1864 to 1868 he was Privat-Dozent in Königsberg. He was then called as Privat-Dozent to Berlin, where he remained till 1870, when he received an appointment as assistant professor at Breslau. After two years Freiburg offered him the chair of materia medica, and two years later he was called to Jena as professor of clinical medicine and pathology. He left there only last year to take the high position of head of a clinic in the Vienna school. So long as the German universities thus select the best talent available in the whole country, it will not be surprising that their halls are crowded with students from the entire world.

The cost of instruction in Germany is moderate. Any foreigner who can show evidence by diploma of three years' work in medicine may obtain from the secretary an "*Erlaubniss*," or formal permission, to attend lectures on payment of twelve marks, half the matriculation fee. Others can matriculate at any time. The cost of each lecture course for a semester is thirty to forty marks, and the sum demanded for access to the laboratory about thirty marks, this including all materials used in working. It is customary for a student to take at least one course of lectures under the professor in whose laboratory he is studying, though this is not obligatory. The student will not find his expenses for tuition more than two hundred marks (fifty dollars) a semester in any university. Living is also cheap in German towns, and the student can secure a pleasant home in a small family, where his daily contact with its members will be an assistance to him in acquiring the language, for the moderate sum of eight to twelve dollars a week. A large income is, therefore, by no means necessary in order to spend a year in study abroad.

Vienna is to-day to the medical student what Mecca is to the Moslem. His life is incomplete—to say nothing of his education—until he has been there. From the time one lands in Europe he will hear the praises of the Austrian capital, and, though he may go with many prejudices, he will, in the end, be obliged to admit its attractions. The secret of that attraction lies in the fact that an enormous medical material is

utilized in the best possible way for the purpose of instruction. In other cities there are as many patients, as many students, as many teachers. But in no other are the three brought together in a manner so profitable to all. In the first place, most of the medical interest centers at the general hospital, and the student does not lose time by running about the city. Secondly, there are so many courses in every subject that every hour of the day can be utilized, even if one is pursuing a specialty. Thirdly, the courses, given to a limited number of students at a time, are compressed into six or eight weeks by being held daily for one or two hours, and thus the general student can, in the course of one semester, pursue a large number of different subjects, while the specialist can gain familiarity by repetition. Fourthly, most instruction is by means of clinical demonstration, the examination of patients by the student being the chief object of any course. And, lastly, the pathological material is immense, but not well utilized.

The Allgemeine Krankenhaus, situated in the Josefstadt, at No. 4 Alserstrasse, just ten minutes' walk from the center of the city, is the largest hospital in Europe. It is built as a series of quadrangles, with large open courts in the center, of which there are nine, the largest being 500 by 300 feet. The buildings are two and three stories high and very plain, there being no architectural display. They are constructed of brick, and, like most of the houses in Vienna, are covered with stucco. They are narrow, so that the wards, which run lengthwise, have light and air upon both sides. There is accommodation in the hospital for 3,500 patients, 85 resident physicians and surgeons, and over 1,000 attendants. The patients are distributed through 33 divisions, of which 6 are of general medicine, 5 of general surgery, 1 of thoracic diseases, 2 of gynecology, 3 of eye diseases, 2 of ear diseases, 3 of syphilis, 2 of skin diseases, 2 of mental diseases, 3 of obstetrics, 1 of throat diseases, and the remainder for private patients. Each division has from two to five separate wards—there being 122 wards in the hospital. In the year 1882 there were 23,565 patients treated in the hospital, and nearly 10,000 women delivered in the obstetric wards. This does not include the number of out-door patients, which has been estimated at 40,000. From these figures one can obtain some idea of the enormous material at the disposal of the teachers in the medical school. Their instruction is given within the hospital, there being large and commodious operating- and lecture-rooms in connection with almost every division. In the hospital there is every provision for the care of the patients, the entire institution being conducted at the city's expense, at a generous outlay of nearly a million florins yearly. The accommodations of the house staff are comfortable, and, in addition to their lodging, they receive salaries which vary from 360 fl. to 1,800 fl. yearly, according to the position held. These positions are obtained by appointment. A number of rooms are always to be obtained within the hospital by students; and, for one who is practicing in the obstetrical wards, it is an advantage to secure such accommodation. They may be obtained by application to one of the janitors at the gates. For the benefit of the staff and of students, there is a large reading-room and library in the hospital, where all the standard German works, and most of the German, French, and English periodicals (and one American weekly journal) may be found. Admission is granted to a foreigner on payment of 2 fl. a month. Though by no means so extensive as the library in connection with the Paris school, it is a much more attractive and pleasant room for reading. In the rear of the hospital are the pathological buildings, with the post-mortem rooms, the operative-course rooms, and the many laboratories. The pathological museum, a very extensive collection, is to be found here.

The St. Anna's Hospital for Children, which is near the General Hospital, has 360 beds, and in its outdoor department 7,000 children are treated annually. It is here that the clinic of Professor Wiederhofer and the private courses of Dr. Frühwald are held.

The Vienna Poliklinik, within two minutes' walk of the hospital, is used by the professors for purposes of instruction in all departments, and here "walking cases" of many kinds may be seen which are not to be found in the hospital.

The Wieden Hospital, 800 beds, and the Rudolf Spital, 900 beds, are used by their attending surgeons and physicians for clinical purposes, and are accessible to students, as are also their pathological departments.

But it is chiefly in the first three institutions named, and especially in the Allgemeine Krankenhaus, that medical instruction is given.

Clinical teaching is such a prominent feature in Vienna that it must be considered particularly, and at some length. More definite information can be given by taking up each department in turn.

Surgery.—The name of Billroth is known to every student of medicine in Europe or America, and it is natural that it should be mentioned first. His clinic is held daily from ten to twelve, except Saturday and Sunday, and is always crowded with students. Cases are brought in in rapid succession, are anesthetized before the class, and, after one of the students has been called down to examine the case and make the diagnosis, Billroth, or his chief assistant, Wölfler, operates. There are always from ten to fifteen assistants present in addition to a company of guests and the students, and, as the amphitheatre is poorly arranged, the opportunity for seeing the details of an operation are not very good. After the operation the case is removed, dressings being usually applied outside the operating-room. Thus many cases are brought before a class daily. Occasionally this order is interrupted and the professor will spend half an hour in explaining the pathology of a case, or in making a careful differential diagnosis. But, as a rule, the time is occupied by operations.

Billroth's two assistants give a number of courses in operative surgery, surgical dressings, and bandaging, and also take classes of students into the wards to examine and dress cases, or to watch the progress of patients from day to day. These courses are limited to ten students, and occupy six weeks. It is well, therefore, in this, as in other departments, for the student to put down his name for a course as soon as he arrives in Vienna, otherwise he may find all the places engaged at a time when he desires a course. The seats in the clinics are assigned at the beginning of each semester by the first assistant, and here, too, it is well to be on hand early in order to obtain a desirable place.

Professor Albert's clinic is more popular than that of Billroth, and his lectures and operations should be attended by the student of surgery. They occur at the same hour as Billroth's, and his material is even greater than that of his rival. Similar courses in operative and practical surgery are given by his assistants, Meydl and Lorenz.

In genito-urinary surgery there are numerous special courses. The lectures by Professor von Dittel and his operations in this field of surgery are largely attended, and in his division of the hospital every variety of diseases of the genito-urinary organs can be seen.

The daily clinic of Ultzmann at the Poliklinik is also crowded, and his course is as complete and satisfactory as any in the city. He devotes one half of the hour to the treatment of patients, and the other to lectures on the urine, especial attention being called to the diagnostic importance of its examination.

These are the principal courses in surgery, though under that head there are thirty-two courses announced in the catalogue. If any one is desirous to devote especial attention to this subject, he will find it possible to obtain almost anything he may desire by applying to one of the assistants at the hospital. They are ready at any time to give special courses provided a sufficient number of students—i. e., four to eight—will join, so that they shall receive an equivalent for their time and trouble. Such courses are somewhat expensive, but usually repay the student well.

The chief general medical clinics are those of Nothnagel and Bamberger, held every morning from eight to ten. In these clinics all classes of cases are seen. It is seldom that more than one case is discussed on one occasion, the patient being used as the text for a careful description of the aetiology, pathology, symptomatology, and treatment of the disease under observation. Occasionally one patient may be lectured upon for several clinics. At other times, several patients, illustrating different stages of the same disease, are brought in during one clinic, and frequently the same patient is shown several times at intervals to demonstrate the progress of the case. When a patient dies, the autopsy is performed in the presence of the class, when the case is one of any interest, and then the history and diagnosis are carefully reviewed in the light of the post-mortem, and the specimens shown.

A description of one of Nothnagel's clinics will convey some idea of his methods. The patient having been brought in, in bed, from one of

the wards which adjoin the lecture-room, one member of the senior class is called down by the professor and requested to examine the case. The questions asked by the student are often rambling and disconnected, and this gives Nothnagel an opportunity to speak of the proper method of getting the history of a case, a point upon which he lays great stress, and in which he insists upon a logical and exact order. The student is then required to describe the patient's condition, his bony formation, his muscular development, his state of nutrition, the condition of his skin, his facial expression, any peculiarities in his appearance, and the precise character of his pulse; in other words, to mention all the points which he should notice for his own information on first seeing a case. After this, the history which has been taken by the house physician is read. The attention of the student is then directed to the most prominent symptoms, each of which is taken up in turn, and, if possible, traced to its pathological cause, it being the great object of Nothnagel to produce in the student's mind a picture of the pathological process which is giving rise to the phenomena present. All the possible causes which could produce a symptom are elicited from the student, and then, as other symptoms are brought out, one or the other of these causes is eliminated until, by a synthesis of symptoms and an analysis of causes, the diagnosis is reached. In all cases a physical examination of each organ and a urinary examination are made before the class by the professor, and the result stated. If an electrical examination is necessary, it is made.

The importance of carefully eliciting every symptom in a complete manner is especially enforced. Then the professor sums up the case concisely, bringing into prominence the diagnostic points and making a differentiation. He also questions the student regarding prognosis and treatment, requiring a physiological reason for the use of any drug, with the exact dosage of each preparation available. To keep the attention of the class for two hours, to lead on the student in an encouraging manner, to bring together all the features of the case into a perfect picture of varying color and appropriate light and shade, and to dismiss them with a vivid recollection of the diseased patient—require an ability in analysis, a personal attraction of manner, a fluency of speech, and an amount of energy which few professors possess to the degree of Nothnagel. That he is successful is proved by the fact that nearly five hundred men attend his clinic daily, and many are obliged to stand during the entire time, in spite of the fact that the room is badly ventilated and the seats uncomfortable. The most perfect order is maintained throughout. For an hour during the afternoon Nothnagel's assistants take all those students who desire to go through the wards, and each has an opportunity to examine for himself the case which has been explained in the morning's clinic. Between forty and sixty take advantage of this ward work daily, and each student is then assigned to some new case, which he is expected to study carefully, to keep a history of, and to be ready to appear with in the clinic if the case is selected for a lecture. Thus the student who comes before the class with the patient is, to a certain extent, prepared, and is, therefore, less embarrassed than he might be if called to a new case. During their rounds the assistants show the processes of urinary analysis, and demonstrate under the microscope the sputa of tuberculous patients. The assistants give courses in physical diagnosis to all the students in divisions. They also give private diagnosis classes, the number of students being limited to six or twelve. In these classes, which are very much liked by foreigners, a patient is assigned to every two men, and, after they have examined him for half an hour, the assistant comes in, discusses the diagnosis, calls attention to any particular points of interest, and informs them what treatment is being pursued. Thus the student is brought into contact with patients and given a practical knowledge of disease. He has all the advantages which are obtained by a position of house physician in a hospital at home without its responsibility.

The clinic of Bamberger is conducted in a somewhat similar manner to that of Nothnagel, but, on account of his very feeble voice, the number of students who can hear is much smaller, and it is less crowded. His assistants give courses similar to those already described.

Professor Drasche, Professor Schrötter, and many Privat-Dozenten announce courses on general medicine, physical diagnosis and general diagnosis, and use the patients in their divisions for the purpose of in-

struction. In the Poliklinik, Stoffella and Oser have large numbers of out-door patients, who can be examined by the students. Thus it will be seen that there is no lack of material for study, and no difficulty of access to it.

The numerous deaths in the hospital, and the fact that in almost all cases autopsies are made, makes the pathological instruction an important feature in the medical work. Autopsies are made every morning between eight and eleven, there being, as a rule, about six, occasionally as many as fifteen in a day. Students can be present and witness the post-mortem made by Professor Kundrat, and hear him dictate the careful description of each organ examined. If they do not wish to spend so much time, they can attend his noon lecture on pathology, at the close of which all the specimens of the day are demonstrated to the class; or they can join one of the limited courses given by his assistant, Dr. Zemann, in which the same specimens are shown to a few men, and they are allowed to examine and handle them. Dr. Zemann also gives a course on the diagnosis of pathological specimens, which is of great interest and service to one who desires to learn anything of gross pathology. Professor Kundrat and his assistants also give short courses on the methods of making autopsies, in which the students are allowed to do the work themselves. A very good course in gross pathology is also given by Dr. Weichselbaum in the dead-house of the Rudolf-Spital, and in his laboratory a course may be taken on microscopic pathology which is unequalled in Vienna. The laboratories of Stricker, Spina, and Basch are crowded with students, mostly Germans, for foreigners find the practical work in the hospital so important that they seldom devote their time to microscopy while in Vienna. These laboratories are, however, well arranged and conducted, and the supply of specimens to work on is unlimited. It has been stated that ten thousand women are delivered yearly in the hospital. These cases are as available for instruction as those in the other wards. There are three obstetric divisions. Those of Späth and Carl Braun are open to students; that of Gustav Braun is used for the education of midwives. Women are received in all stages of pregnancy, and await delivery in the hospital; but the majority of cases do not enter until they are in the first stage of labor. When the pains begin the woman is sent to the division which is on service at the time, there being a regular rotation of the three divisions, each serving twelve hours. Each division has one ward for deliveries and several other wards for the care of patients after labor, to which they are removed three hours after the birth of the child, and where they are kept usually for ten days, when they are considered able to go out.

Every student who desires to practice in the obstetric wards takes a ticket for a course of lectures on obstetrics, and this ticket admits him at any time to the wards to witness deliveries. It also entitles him to place his name on the roll among three hundred other names to await his turn for service. Every day names are posted in each division, and, as each patient can be examined by a certain number men, and there are frequently twelve or fifteen patients in various stages of labor, each man has an opportunity to examine and deliver several cases when his name is down. In addition to these four names, two others are posted by the assistant in charge, and these are selected from a list of names, on which list any one desiring to practice may put his signature. If a man desires to work constantly in obstetrics he will therefore obtain the right to practice in both divisions and keep his name down on both voluntary lists, and in this way he can be assigned to a ward at least three times a week, and sometimes oftener. During vacations—that is, between March 1st and May 1st and between August 1st and October 1st, and during the first six weeks of each semester—all the names are selected from this voluntary list, and then a practitioner can serve about as often as he desires.

The wards of each division are under the direction of two assistants, each serving on alternate days and performing all the operations which are necessary. These assistants give several private courses in obstetrics. One course is called a "touch course," in which women in all stages of pregnancy are examined, and the diagnosis of the stage, the position, the presentation, etc., are made by the student; all the obstetric operations are described and their indication stated; in fact, a complete course on obstetrics is given, with the advantage of a patient to illustrate every detail. In one of these courses, which are limited to

three or four men, a student can learn more than by a year's reading, and no man should stay in Vienna a month without obtaining this instruction. A second course is in operative obstetrics, in which all kinds of operations are taught upon the cadaver or mannikin, each student being obliged to perform them himself under direction of the assistant. No one can expect to be allowed to operate in the wards unless he has taken one or more of these courses with the assistant, but, having taken them, he is sure of an opportunity to put his knowledge to use.

Courses in gynecology, gynecological diagnosis, and operations are also given by the same assistants. These courses are good, because they are given by young men who are enthusiastic in their work and eager to attract students by the excellence of their teaching. Those of Ehrendorfer and Pritzel are especially recommended. Bandl's class in gynecology at the Poliklinik is a practical one, students being required to make diagnoses constantly. In the hospital, in addition to the wards of Carl Braun, where operations may be seen every morning, there are the wards of Dr. Pawlik, Dr. Funk, and Dr. Schlesinger, Privat-Dozenten in this department.

The diseases of children are seen in Vienna to great advantage, there being numerous clinics open to the student. Professor Wiederhofer lectures daily at the St. Anna's Children's Hospital upon cases brought into his class, and then takes the students through the wards, so that they can follow the progress of cases from day to day. His assistant, Dr. Frühwald, gives similar instruction at another hour.

In the Carolinen Kinderspital, and in the Rudolf Kinderspital, clinics are also held three times a week, the material being as great as at St. Anna's. At the Poliklinik, Professor Monti holds one of the best courses in Vienna, devoting half an hour to the examination of cases, and the other half to a course of lectures on the diseases of children, which are full of practical and useful instruction.

Among the specialties, that of skin diseases is naturally first. The Vienna school, founded by Hebra and ably conducted by Kaposi and Neumann, attracts students from the entire world. The clinics are enormous, there being frequently 60 to 100 cases presented daily at Kaposi's class. Diagnosis is the great object in the lectures, and is secured by comparison of patients presenting similar symptoms. Probably in no other specialty is it more necessary to see cases, and more difficult to acquire knowledge by reading, and in no place can more cases be seen than in Vienna. The morning clinic of Kaposi and the afternoon clinic of Neumann can be supplemented by visiting their wards with their assistants, or by attending some of the other practical courses by Privat-Dozenten, of which there are nearly a dozen. Nor must it be supposed that treatment is neglected. Various methods can be seen in the wards, and the results watched from day to day. The foreigner will be especially interested in going through the bathing establishment connected with Kaposi's wards, where every form of bath is given, and where the treatment by continued immersion is to be seen, patients being shown who have not been out of the bath for six months. Severe burns are treated by keeping the patient continuously in water, with immense relief from pain and with good result. Syphilis is classed with skin diseases in the hospital, but special lectures on it may be heard from Zeissl and Neumann.

Diseases of the eye come near to skin diseases in importance in Vienna, where Jäger and Arit and Stellwag have kept up the reputation of the school founded by von Graefe. There are three divisions in the hospital devoted to this class of cases, and in these the specialist will find enough to do to fill up all his day. In addition to the general clinics, there are operative courses, courses on refraction and accommodation, and courses on the use of the ophthalmoscope. Every graduate in Vienna must pass an examination on diseases of the eye, and hence these classes are all filled with students. One can follow the rounds from 8 to 10 and see operations, then watch a clinic from 10 to 12; from 2 to 4 take the admirable course of Mauthner in the pathology and treatment of eye diseases, and from 4 to 7 use the ophthalmoscope under the direction of Dinmer or Borysiewicz. In diseases of the ear, the courses of Politzer and Grüber in the wards of the hospital, and of Urbantschitsch at the Poliklinik, leave no form of malady unexplained.

Diseases of the nervous system and of the mind are taught in Vi-

enna by Meynert, Rosenthal, Leidesdorf, and Benedikt, both by lectures and by clinics, in the hospital and in asylums. Several Privat-Dozenten give short courses in the wards, and one who follows Nothnagel's clinic will notice the pleasure which he takes in showing cases in his own favorite department. In the laboratory of Meynert his system of brain anatomy is presented in all its details, a collection of microscopic specimens unequaled in Europe may be examined, and the pathology of insanity, as far as it exists, may be learned.

There are many courses given on diseases of the throat, all of them for the purpose of giving a student opportunity to acquire skill in the manipulation of the instruments and in local applications to the parts diseased. Schrötter, Schnitzler, Fischer, Störk, and Chiari announce lectures and clinics. The student will obtain most satisfaction from those classes in which the number is limited to four or six, as he will then receive personal attention, which is of great use to the beginner and a satisfaction to the skillful diagnostician. It is therefore necessary to register one's name for such a course several weeks before it begins. The student will soon make the acquaintance of Frau Gehley, one of the characters about the hospital, who for twenty years has made her living by allowing students to examine her throat. She has most perfect control over her organs, and can demonstrate any part of her larynx and touch any part with the probe herself. A few hours' practice upon her will teach a beginner as much as an ordinary course.

It will be seen from this review that there are few subjects of medical knowledge in which the student can not find satisfaction in Vienna. The complaint will be rather that too much is offered for him to take; that there is a true *embarras de richesses*. A few practical suggestions may therefore be allowed which are derived from personal experience: Let the student go to Vienna during a vacation—i. e., in March or in August—and occupy himself in the study of obstetrics, which he can do to the best advantage at this time, taking operative and touch courses of at least two assistants, and practicing in the wards. Any extra hours he may have can be devoted to some of the specialties—eye, skin, or throat, or to diagnosis classes in the wards—as many of the courses of the assistants are kept up during the vacation, and they are ready to form classes if a sufficient number (four to ten, as the case may be) apply. When the term begins he can then choose his studies without being obliged to allow for obstetric work in the wards, which otherwise may interfere with his taking pathological or operative courses. Whatever clinic may be selected, the student should follow that one continuously, for there is usually a method in the selection and order of cases demonstrated, as he will find by reviewing his notes at the end. The great drawback in Vienna is the fact that several courses which one may desire to take are held at the same time, and the student attempts to solve the difficulty by attending all irregularly, thus losing the benefit of each as a whole. It is better to sacrifice the least important, and then, by means of the courses of the Privat-Dozenten in that department, make up for the loss of the lectures of the professor. The fact that most of these courses take but six weeks enables one to hear a number of them during one semester.

The fact that no reference has been made to anatomical or physiological work indicates that it holds a secondary place in the Vienna school. It can be done if one desires to do it. But, when one has access to such clinical material as is offered in the hospital, he feels that his time should be devoted to that most practical side of medicine rather than spent upon the rudiments. And, furthermore, the facilities for anatomical work are far better elsewhere, as already indicated in the section on Paris. It may be mentioned, however, that the anatomical rooms and the physiological laboratory are situated on Währinger Strasse, in the rear of the hospital and opposite the Poliklinik. The buildings are old and somewhat dark. There is, however, no lack of material for dissection, and if one desires demonstrations in anatomy, the prosecutors are ready to give special courses which shall comprise whatever the student desires. In physiology, the lectures of Brücke and Exner are open to the student, but, on account of certain peculiarities of the lecturers, they are not very popular.

The chief medical society of Vienna is the Academy, of which all the professors are members, and the meetings of which they attend regularly. Billroth was president last winter, and Arlt vice-president. At their meetings, held on Friday evenings at seven o'clock in the old

university building, some of the most remarkable cases in the hospital are shown, and many carefully prepared and interesting papers are read. The visitor should not fail to attend these meetings, which are open to any medical man.

To a student who has been at Paris, one of the chief features of study in Vienna will be its expense. In Paris everything is free. In Vienna nothing is free. He can not escape the idea that the hospital is used as a money-making institution. But he will soon perceive that he is receiving a fair equivalent for his outlay, and will not regret the Thalers spent. The professors' courses are from ten to twenty florins for the semester (a florin equals forty-two cents). The majority of the small private courses are twenty florins. A diagnosis course can not be obtained for less than twenty-five florins. An operative course is the same. The obstetric touch courses are fifty florins for twenty-five lessons. A student must allow at least three or four hundred florins a semester for courses. This is much in excess of the amount demanded in Germany, but to the American student does not seem unreasonable. For the reason that his studies may make his hours of leisure irregular, the student will find it much more convenient to hire a room near the hospital and take his meals at some of the restaurants in the vicinity. Good rooms can be obtained at prices varying from twenty to forty florins a month, according to comfort and location. The boarding-houses are to be avoided, as they are all very poor. Meals in restaurants will cost from two to five florins a day. Expenses will, therefore, average in Vienna considerably less than in New York.

A few Americans go to Prague for purposes of study. The character and methods of instruction there are very similar to those in the capital, and the advantages for the study of obstetrics under Breisky are fully as great. The hospital is, however, much smaller than the Allgemeine Krankenhaus of Vienna, and neither the material nor the ability of the instructors is sufficient to attract many students. One who can not be satisfied in Vienna should at once abandon the study of medicine and return home.

It is hardly necessary to refer to other universities, since none of them can compete with those already described in offering attractions to the medical student.

The institutions of Italy and Switzerland are well equipped and present attractive catalogues, but few foreigners are found among their students, and their practical courses are inferior to those in Germany.

The medical student just about to start is often uncertain where to go. The writer would recommend the following plan:

Make a short stay in London to see the best men and obtain an idea of English methods. If, by contrast later with German men and methods, they appear preferable, the student can return to England; if not, he will have a longer time for work on the Continent. Go next to Germany, and select one of the smaller university towns for the first three months' work. Here whatever time is not occupied in acquiring the language can be spent in the study of pathology in a laboratory whose director will be able to give his instruction to the beginner in his own language. Strassburg, Heidelberg, or Leipzig may be chosen for this purpose. As soon as the first semester is over go to Vienna for obstetric work during the vacation, and while there obtain whatever information is desired regarding the special study which is to be pursued. Both the specialist and the general student will find one semester in Vienna indispensable, and will probably desire to take a second one. The second vacation may be passed at Berlin, Leipzig, or Munich, where special courses are to be obtained between the semesters. From Germany go to Paris, so arranging one's plans as to spend the months of April to July in that city. If French is not understood, it can be learned in Germany during the preceding winter, or a competent teacher can be obtained in Paris at the International Society of Teachers in the Rue Royale. If one's time is very limited, spend it all in Vienna. If it is unlimited, visit as many universities as possible, but do not spend less than an entire semester in each, for little good will be obtained from hearing but half a dozen lectures from any one man. Above all, remember that it is less the actual knowledge obtained than the new methods of acquiring knowledge which are to be prized and utilized. If the student returns imbued with the French enthusiasm combined with the German thoroughness, his medical trip will be a permanent source of congratulation.

Original Communications.

STENOSIS OF THE TRACHEA: THREE CASES.*

By E. FLETCHER INGALS, M. D.,
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DURING the past year I have treated three cases of obstruction of the trachea, the results of which I think sufficiently satisfactory to render brief histories of them of interest to this association.

CASE I.—J. M., aged about forty-five. I was called to see the patient first in October, 1882. I found him suffering greatly from dyspnoea, with loud sonorous and labored respiration; he was unable to lie down, and moved with great difficulty. The legs and feet were oedematous and painful, and the urine was scanty. Frequent paroxysms of cough and excessive dyspnoea occurred, during which the patient's life was often in imminent danger.

He said that he had been under treatment about eight months for bronchitis and asthma. He had but little fever, and there was no pain except that in the legs. The shape of the chest was normal, but there was considerable falling in of the soft parts during respiration.

An irregular area of dullness could be detected in the upper sternal region and extending about an inch to the left of the sternum.

Loud sonorous râles, heard best over the lower part of the trachea, were propagated over the whole chest. The lungs themselves were healthy, and the heart and blood-vessels yielded no abnormal signs. No difficulty was experienced in swallowing. The larynx was normal. There was no interference with the function of the recurrent laryngeal nerve, and the upper half of the trachea, which was all that could be seen, was natural in appearance.

The stomach was healthy, and, excepting the small secretion of urine, there was no evidence of disease in the other abdominal organs.

From the seat of the râles and from the symptoms, I was satisfied that the patient's distress was due to obstruction at the lower part of the trachea; and, from absence of all the signs of aneurysm excepting dullness, and from absence of symptoms of the cancerous cachexia, I concluded that the obstruction was due to sub-sternal thickening. This I presumed to be of syphilitic origin, though, owing to the surroundings, I could not obtain the history on this point for several days.

The patient was given hydragogues, cathartics, and iodide of potassium in moderate doses, upon which he improved for a few days, but at the end of a week he seemed in such a critical condition that a consultation was held. At this time, while the young wife was absent for a moment, the patient confessed to having had syphilis seven years previously.

The case appeared hopeless, but it was decided to increase the dose of the iodide of potassium to twenty grains. This was ordered to be taken, with half a glass of water, every sixth hour, alternately with ferruginous and bitter tonics. Anodynes to quiet the cough, and cathartics as needed to keep the bowels free, were also administered at irregular intervals for several days.

The patient soon began to improve, and gradually mended

for two or three weeks, when the dose of the iodide was increased to thirty grains, three or four times a day.

The administration of the remedy in these large doses was followed by most happy results, and at the end of two months the patient expressed himself as much better than for many months before; however, about six weeks later, the symptoms of obstruction of the trachea grew worse, and did not yield to the remedy in this dose.

The dose was then increased to sixty grains three times a day, and again rapid improvement followed. Before long the patient was able to leave the house, and subsequently, for several months, he visited me at irregular intervals at my office. He continued most of this time to take the large doses of iodide of potassium.

Finally, hoping for more complete relief, he determined to go to the Hot Springs of Arkansas, where he remained for two or three weeks, at the end of which time a telegram announced his sudden death. He was reported to have died of asthma.

In this case life was undoubtedly prolonged many months by the use of large doses of the iodide of potassium.

CASE II.—A. H. H. came to me complaining of hoarseness, violent paroxysms of cough, and severe dyspnoea, which had troubled him for two months. A careful examination of the chest revealed signs similar to those in the preceding case, excepting that there was no abnormal dullness. The larynx was normal, and the upper third of the trachea, which was all that could be seen on account of a sharp bend, was healthy.

In this case the seat of the râles and obstruction could be ascertained by auscultation to be the lower part of the trachea, but the cause of the obstruction could not be ascertained; however, a history of syphilis, six years previously, induced me to order the iodide of potassium in large doses.

Subsequently this was substituted by the iodide of sodium, the dose of which was increased to one hundred and twenty grains three times a day. The remedy was given at first in doses of forty-five grains each, three times a day, the dose being increased ten or fifteen grains with each succeeding day until the amount of six drachms daily had been reached. This was continued three or four days, and then the drug was suspended for three or four days, when the patient began again with doses of forty-five grains, which were gradually increased as before. Under this treatment he steadily improved, and was soon able to attend to business. At the end of three months he reported himself better than for several months before.

He is still doing well, and taking the medicine part of the time, but the case is not completed. There has been no return of the severe symptoms, and he is able to attend to business regularly.

CASE III.—A. P. came to me thirteen months ago, complaining of hoarseness and dyspnoea on active exertion. He was a robust man, weighing about two hundred pounds, and seemed, aside from the foregoing symptoms, to be in the best of health.

Upon laryngoscopic examination, I found a small, conical projection from the anterior part of the trachea in the median line, half an inch below the glottis.

This was three sixteenths of an inch in diameter near the base, about a quarter of an inch in altitude, and was surrounded by a congested and swollen mucous membrane.

The mass itself was of a deep-red color for about two thirds of its altitude, but the remainder, at the apex, was of a yellowish-white color, giving it the appearance of a pustule.

Mild astringent applications were made two or three times, and the sulphide of calcium was given internally for about a week, when the pustule opened, its contents escaped, and it shrank to about one third of its original size. In two or three

* Read before the American Laryngological Association, May 13, 1884.

weeks this had mostly disappeared, but the mucous membrane remained considerably swollen.

Two or three weeks later a similar growth appeared in nearly the same position, which ran the same course as the preceding, and left increased thickening of the mucous membrane, especially at the sides of the trachea.

This growth was soon followed by another, and it by a fourth, after which the thickening of the mucous membrane at the sides of the trachea, half an inch below the true cords, closely resembled the appearance of the ventricular bands when nearly approximated.

A chink was left between the two sides not more than three sixteenths of an inch in width by five eighths of an inch in length. Respiration was constantly greatly obstructed, and it became difficult for the patient to make the slightest exertion. Paroxysms of distressing suffocation, probably due to collection of the secretions, were of frequent occurrence, especially at night.

At this time another growth made its appearance near the anterior end of the welt on one side, and, as it slowly increased in size, steadily aggravated the difficulty in respiration so as to render the patient's condition dangerous. I was then compelled to do tracheotomy.

After the operation there were no unusual symptoms, and at the end of three weeks, the growth having disappeared, the chink was nearly as large as after the preceding growth. From what I learned of this gentleman's history, although there had been none of the common symptoms of specific disease for twenty years, I determined to give him iodide of potassium, which I administered in from ten- to twenty-grain doses for several weeks previous to the tracheotomy, but without good result.

About three weeks after the operation, at the suggestion of a friend who had treated the patient a few years previously for some obscure affection of the nervous system, I began the use of large doses of the iodide of potassium, starting with forty grains at a dose four times a day, and increasing the size of the dose each day ten grains until he took one hundred and twenty grains four times every day. This dose, which gave him four hundred and eighty grains daily, was continued about ten days, and then all medicine was suspended for a few days, when it was resumed in doses of forty grains, which were steadily increased as before.

Under this plan of treatment I saw the thickened tissues melt away, so that at the end of three weeks the caliber of the trachea was of full size. Subsequently the medicine was continued at intervals, being taken about half of the time for several months, in doses varying from thirty to sixty grains, three times a day. The patient, having left the city a few weeks after the operation, to be gone several months, used his own discretion in taking the medicine.

The cannula was not removed from the trachea until after the patient's return to the city six months after the operation. The opening closed so promptly that at the end of two days no air escaped from it.

In the first of these cases the large doses of iodide of potassium prolonged life many months. In the second case the iodide of sodium restored to usefulness a man who without it could have lived but a few weeks, and in the third case the iodide of potassium relieved the patient from the necessity of permanently wearing the trachea-tube, and perfectly restored his voice.

I have presented these cases merely as suggestive of what may occasionally be accomplished with enormous

doses of a remedy which I believe should usually be administered in small doses. I am well aware that given indiscriminately it would be productive of most serious results, but used judiciously, in properly selected cases, it is an agent of inestimable value in some of the most dangerous affections we are called upon to treat.

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DISCUSSION.

Dr. DE BLOIS: With regard to the treatment of laryngeal stenosis by the iodide of potassium, I have seen a case in consultation in which the patient was unable to take mercury. Large doses of iodide of potassium were given with marked improvement, as the swelling in the larynx almost entirely disappeared from the effect, it was believed, of the use of the drug.

Dr. SHURELY inquired of Dr. Ingals whether in his first case the swelling was entirely of the mucous membrane, or whether the tracheal glands were involved.

Dr. INGALS replied that there was no reason to believe that the glands were involved.

Dr. LANGMAD: I believe that laryngeal stenosis, in consequence of swelling, is very much more commonly the result of syphilis than is supposed. I agree with Dr. Mackenzie's view as to the proclivity of syphilis to show itself in the upper air-passages. It will be found that congenital syphilis in particular is the cause of many cases of death which have been attributed to croup, laryngeal diphtheria, etc., stenosis having taken place from subglottic swelling due to the syphilitic poison. Adults, as is well known, are not to be excepted. In the case of a woman suddenly attacked with urgent dyspnea at night, I was called, and found subglottic swelling, corresponding to the condition described by Dr. Ingals. I suspected syphilis, and made immediate inunctions of mercury, and gave iodide of potassium internally, at the same time preparing for tracheotomy should it prove necessary. Recovery after the inunctions was rapid and complete. Some years ago I was requested to care for a patient of Dr. Knight's during his absence. I was sent for and found the patient suffering from urgent dyspnea from subglottic swelling, and adopted the same treatment as in the other case. Relief was almost immediate. In looking back over my early dispensary experience, I can recall several cases of death in young children which I now believe might have been obviated by active specific treatment.

Dr. DELAVAN: A few years ago a woman came to me complaining of a slight degree of laryngeal dyspnea which, although the laryngoscopic appearance resembled chondritis vocalis inferior hypertrophica, I believed to be due to syphilis. She stoutly denied specific disease, however, and disappeared from observation for about two months, when she returned, suffering so severely that tracheotomy seemed necessary. Examination showed that the trachea was almost completely occluded at a point immediately below the glottis. The patient finally admitted having acquired syphilis about ten years before. Before resorting to operative measures, large and frequently repeated doses of iodide of potassium were administered, with almost immediate relief to the dyspnea, and within a wonderfully short time, with the entire disappearance of the subglottic stenosis.

Dr. BOSWORTH: The weight of evidence seems to be in favor of the use of large doses of iodide of potassium. My belief is, from experience in other than syphilitic cases, that iodide of potassium is a dangerous remedy in tracheal swellings or oedema. I have been accustomed to employ it, but with some hesitation, until in one case, in which it produced iodism, it resulted in such swelling of the mucous membrane of the air-passages as to render tracheotomy imperative. Since that time I have con-

find myself to the internal administration of mercury or to mercurial inunctions. The question arises, whether Dr. Langmaid's success was not due to the mercurial inunctions rather than to the iodide of potassium. I rely mainly upon mercury in the treatment of the late manifestations of syphilis.

Dr. LANGMAID thought the improvement which took place in his cases was due to the mercurial inunctions rather than to the iodide of potassium.

Dr. INGALLS, in closing the discussion: I am glad Dr. Bosworth has criticised the use of the iodide of potassium. In one of the cases mentioned in the paper I feared such a danger, and was induced to continue its use in large doses only by the assurance of the physician under whose care the patient had been, that large doses had been given before with impunity. It does not always require large doses of the iodide to produce a coryza. I know of patients in whom from five to ten grains will give rise to the symptom, while large doses produce no such effect. The custom of giving the drug uniformly in large doses is pernicious.

SOME REMARKS ON TWO HUNDRED AND EIGHTY-EIGHT DEATHS.

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In Vol. XXVI of the "New York Medical Journal" I reported 112 deaths, with tables and remarks similar to those following. The present number makes a total of 400. The object of both papers is to assist in discovering whether there is any connection between the time of day or night, the state of the thermometer, barometer, direction of wind, etc., and death, and, if so, what that connection is. The small number of cases does not go very far toward this consummation, but, as the experience of one observer, may be of service. They were nearly all hospital patients, and in the majority a post-mortem was held.

Hours at, or nearest, which death took place.

A. M.	8.	6	P. M.	8.	10
1.....	15	9.....	10	1.....	11
2.....	8	10.....	16	2.....	13
3.....	11	11.....	12	3.....	17
4.....	3	12.....	8	4.....	15
5.....	12			5.....	13
6.....	18	Total.....	129	6.....	13
7.....	10			7.....	10
				Total....	159

Ages at, or nearest, which death took place.

1 and 10.....	4	40 and 50.....	45	80 and 90.....	7
10 and 20.....	16	50 and 60.....	28	90 and 100.....	3
20 and 30.....	65	60 and 70.....	39		
30 and 40.....	61	70 and 80.....	20	Total.....	288

Table of ages at, or nearest, which death took place in the various months.

	10	20	30	40	50	60	70	80	90	100	Total.
January.....			7	5	4	5	3	1			25
February.....	1	2	7	5	5	1	5	2		1	29
March.....		2	3	6	3	2	4	1	1		22
April.....		1	8	4	2	1	3	2			21
May.....		3	9	2	2	2	3	3	2	1	28
June.....		1	3	6	5	1	1	3	1		18
July.....		2	4	5	5	3	4	1	1		25
August.....		1	7	8	5	2	1	3	1	1	21
September.....		1	7	4	2	1	3	2	1		21
October.....	1	1	2	6	3	6	3	3	2		27
November.....		3	8	6	7	2	3	1			30
December.....			2	3	1	3	4	4	1		18
Total.....	2	2	16	67	59	44	29	39	20	7	288

Table showing the number of deaths at different conditions of the thermometer.

5°.....	0	40°.....	28	75°.....	31
10°.....	0	45°.....	22	80°.....	14
15°.....	3	50°.....	28	85°.....	14
20°.....	3	55°.....	23	90°.....	5
25°.....	9	60°.....	13	95°.....	0
30°.....	16	65°.....	19		
35°.....	27	70°.....	33	Total.....	288

Table showing number of deaths at the different barometric conditions.

29.20.....	2	29.95.....	16	30.45.....	4
29.50.....	1	30.00.....	40	30.50.....	6
29.55.....	3	30.05.....	28	30.60.....	3
29.60.....	2	30.10.....	31	30.70.....	2
29.65.....	7	30.15.....	22	30.80.....	
29.70.....	5	30.20.....	21	30.90.....	1
29.75.....	7	30.25.....	16		
29.80.....	9	30.30.....	16	Total.....	288
29.85.....	9	30.35.....	10		
29.90.....	18	30.40.....	5		

For table of ages, sex, cause of death, etc., see following pages.

If we examine these tables, we find that there were 129 deaths occurring between midnight and midday, and 159 between midday and midnight (*vide* Table No. 2). But, if we take the most chronic causes of death—old age and consumption—and add them to those reported by me in a paper published in Vol. XXVI of the "New York Medical Journal" of 112 deaths, as stated, we find that the total of 400 recorded cases will give exactly 73 between midnight and midday, and 73 between midday and midnight; so that the proportion of 10 per cent. in the number of deaths from all causes is, if we can be at all guided by this small number of 400 cases, reduced to zero.

If we take Table No. 2 and divide the twenty-four hours into sixths, commencing at 1 A. M., we find that the same number of deaths (46) took place in the second, third, and fifth; that the fourth and sixth showed the highest proportion (56 and 57, respectively), while the first, or that from 1 A. M. to 4 A. M., inclusive, the lowest, or only 37. These added to the table of 112, above alluded to, will give the following:

Of the 400 deaths:

- 60 occurred between 1 and 4 A. M., inclusive.
- 62 occurred between 5 and 8 A. M., inclusive.
- 69 occurred between 9 and 12 A. M., inclusive.
- 80 occurred between 1 and 4 P. M., inclusive.
- 61 occurred between 5 and 8 P. M., inclusive.
- 68 occurred between 9 and 12 P. M., inclusive.

400 Total.

The table of the ages at which death occurred calls for no comment.

Of the total number of cases recorded (400), we find 141 from affections of the respiratory organs. Of these, 89 died between November 1st and April 30th (inclusive), while 52 only died during the remaining six months.

Of the 288, 170 died between thirty and fifty, inclusive, while, if we take the whole number (400), we notice that only 212 died between those ages, or very little above one half. It must be remembered that nearly all the cases recorded in both papers were in hospital practice, which will account for the large proportion at the mid-period of life.

TABLE OF AGE, SEX, CAUSE OF DEATH, ETC.

DATE.	Age.	Sex.	DISEASE.	HOUR OF DEATH.		State of thermometer.	State of barometer.	Direction of wind.	Velocity of wind, in miles.
				A. M.	P. M.				
1877.									
April 4	23	F.	Consumption		7.45	43	29-973	E.	8
" 11	40	M.	Consumption		5.30	64	29-918	N.	5
" 19	29	M.	Consumption		12.00	51	29-701	N. E.	6
" 24	23	F.	Typhoid fever.		11.15	68	29-916	N.	16
" 25	59	F.	Strangulated hernia.	8.30		61	30-034	N.	8
May 6	56	F.	Heart disease.		10.00	52	29-998	W.	3
" 9	44	M.	Hepatic abscess.	7.30		50	29-793	N.	6
" 22	26	M.	Consumption	2.00		70	29-689	N. E.	4
" 24	82	M.	Apoplexy.		9.50	53	30-007	N. W.	4
June 3	44	F.	Consumption		5.30	79	29-916	S. W.	6
" 4	32	M.	Consumption		4.30	82	29-917	S. W.	16
" 17	32	M.	Perinephritis.		8.00	77	30-099	E.	6
August 12	29	M.	Insolation.	9.50		71	30-069	S. W.	6
September 3	44	F.	Consumption	8-20		64	30-128	S. W.	2
" 17	35	M.	Heart disease.		9.30	72	29-846	S. W.	6
" 17	79	M.	Old age.		7.30	72	29-836	S. W.	6
" 27	43	F.	Consumption		4.10	76	30-135	S. E.	7
" 30	22	M.	Typhoid fever.		4.00	65	30-244	E.	1
October 1	44	M.	Lead colic.		2.30	73	30-189	E.	5
" 10	71	F.	Old age.		10.15	66	30-107	S.	6
" 13	35	M.	Dysentery.	12.40		52	30-292	N. W.	2
" 14	50	M.	Consumption	6.30		50	30-331	N. W.	2
November 3	15	M.	Acute consumption.		6.30	52	30-109	W.	12
" 20	42	M.	Consumption	10.00		40	30-599	N. E.	4
December 10	48	F.	Cancer of the uterus.	9.15		40	30-187	S. W.	12
1878.									
January 6	69	M.	Apoplexy.	11.10		25	30-177	W.	14
" 10	40	M.	Gangrene of the lung.		10.15	42	29-551	W.	7
" 17	44	F.	Chronic epilepsy.		9.00	36	30-230	E.	3
" 22	27	M.	Lumbar abscess.		11.00	47	29-761	W.	4
" 25	21	F.	Heart disease.		4.00	46	30-170	S. E.	4
February 11	50	F.	Cancer of the uterus.	7.15		43	29-499	N.	4
" 28	71	M.	Heart disease.	5-15		55	30-000	W.	4
March 4	77	F.	Old age.	1.30		42	29-654	N. W.	14
" 12	31	M.	Consumption.		3.00	43	29-696	N. E.	10
" 17	61	M.	Gangrenous cellulitis.	6.40		46	29-808	N. E.	1
" 26	55	M.	Shock (burn).		6.30	32	30-113	N. W.	7
" 29	46	M.	Cirrhosis of the liver.		2.00	56	29-976	N.	12
" "	34	M.	Delirium tremens.		6.10	50	29-986	N.	4
April 10	79	F.	Old age.		6.00	59	29-906	S.	8
May 9	50	F.	Cancer of the stomach.		5.00	76	29-781	N. W.	10
" 15	41	M.	Addison's disease.		9.05	54	29-984	W.	4
June 7	21	F.	Consumption.	11-45		69	29-943	S. E.	8
July 4	24	F.	"		2.45	87	30-023	S.	4
" 17	47	M.	"	10.30		86	29-981	S.	4
" 22	54	M.	Cancer of the œsophagus.		10.50	74	29-904	N.	6
September 4	40	M.	Heart disease.		3.00	84	29-874	N. W.	3
" 11	30	M.	Cirrhosis of the liver.	12.45		69	30-031	E.	8
November 2	28	F.	Consumption.		10.10	40	30-291	N.	3
" 17	35	F.	Ulcer of the stomach.	6.30		57	30-204	N. E.	1
" 20	44	M.	Bright's disease.	2.30		54	29-798	E.	4
" 27	41	M.	Cancer of the liver.		7.00	38	30-102	N. E.	10
December 29	56	M.	Pneumonia.		2.50	30	30-325	W.	6
1879.									
January 1	32	M.	Meningitis.	10.30		33	30-092	S. E.	1
" 9	52	M.	Heart disease.	9.30		39	29-795	S. W.	5
" 18	53	F.	Cancer of the pylorus.		1.00	32	29-997	N. E.	5
" 27	49	M.	Consumption.		10-15	44	30-170	S. W.	16
February 4	30	M.	Pneumonia.		11.25	34	30-052	N.	3
" 13	70	F.	Cancer of the stomach.		12-30	29	30-153	N. E.	4
" 24	24	M.	Consumption		4.10	37	29-916	N.	8
" 27	45	M.	Chronic bronchitis.		11.45	27	30-630	N. W.	6
March 12	82	F.	Old age.	12.30		39	30-292	N. W.	3
" 29	56	M.	Consumption.		8.10	49	30-095	S. W.	1
April 5	26	F.	Acute peritonitis.	9.30		45	30-175	N. W.	4
" 26	66	F.	Old age.		1.00	53	30-203	E.	6
May 7	60	M.	Apoplexy.		5.45	51	30-261	N. W.	5
" 14	40	F.	Consumption.		3.00	79	30-000	S.	11
" 16	36	M.	Chronic pleurisy.	2.00		66	29-919	S. E.	4
" 30	34	M.	Consumption.		5.00	68	30-153	E.	3
June 11	74	M.	Apoplexy.		3.00	72	29-992	S. W.	6
" 11	42	M.	Hip-joint disease.		9.15	72	29-935	W.	2
" 22	55	M.	Cancer of the stomach.		4.00	74	30-070	S.	3
July 17	66	F.	Cancer of the face.		8.00	80	29-921	N.	8
" 26	40	M.	Consumption.	2.00		75	30-002	E.	6
August 5	37	M.	"		1.00	77	29-941	N. W.	4

TABLE OF AGE, SEX, CAUSE OF DEATH, ETC. (continued).

DATE.	Age.	Sex.	DISEASE.	HOUR OF DEATH.		State of thermometer.	State of barometer.	Direction of wind.	Velocity of wind, in miles.
				A. M.	P. M.				
1879.									
August 5	81	F.	Old age.		8.00	77	29-941	N. W.	4
" 14	26	F.	Consumption.		8.10	69	29-923	S.	4
" 15	28	M.	Pneumonia.		8.30	72	29-985	N. E.	6
" 18	69	M.	Chronic diarrhoea.	11.00		67	29-850	N.	14
" 23	60	M.	Heart disease.	11.15		84	29-940	S.	6
" 29	32	M.	Consumption.	9.05		64	30-161	S. E.	2
September 23	28	M.	Typhoid fever.		11.00	63	30-099	S. W.	5
" 25	32	M.	"		1.00	47	30-325	N. W.	4
November 2	26	M.	Bright's disease.	5.30		49	30-111	E.	3
" 17	48	F.	Cancer of the uterus.		11.40	51	30-144	S. E.	5
" 20	63	F.	Ovarian tumor.		6.45	25	30-004	N. W.	19
December 15	64	M.	Consumption.	1.00		40	29-779	W.	4
" 16	30	M.	Typhoid fever.		10.00	40	30-000	S.	8
" 17	75	M.	Pneumonia.		9.00	39	30-231	N.	4
1880.									
January 15	58	M.	Cirrhosis of the liver.		8.00	38	30-347	N.	4
" 18	27	M.	Typhoid fever.	8.20		34	30-060	N. W.	3
" 28	49	M.	Congestion of the lungs.		8.30	49	30-037	N. W.	2
February 11	24	M.	Consumption.	2.00		32	30-417	N.	1
" 14	32	F.	"	8.30		56	29-538	N. E.	3
March 13	61	M.	Gangrene of the legs.		10.00	34	30-254	N.	5
" 18	70	F.	Old age.	11.30		41	30-072	S.	4
" 19	33	F.	Consumption.	11.40		42	29-749	N. E.	6
April 5	45	F.	Cancer of the liver.		12.00	61	29-896	N. W.	2
" 8	41	F.	Consumption.	9.40		36	30-368	N. W.	7
May 10	68	M.	Enlarged thyroid.		11.00	71	30-020	S.	4
" 21	75	F.	Apoplexy.		2.55	84	30-047	S.	17
June 20	5	M.	Caries of the sternum.	6.00		74	30-178	W.	2
" 24	78	M.	Old age.		12.00	80	29-965	W.	4
" 25	40	F.	Consumption.	5.00		79	29-935	Calm.	
" 30	28	F.	"		3.00	85	30-044	W.	8
July 7	32	M.	"	8.00		77	30-055	N. W.	6
" 8	85	F.	Fracture of the thigh.	9.00		77	30-055	N. W.	6
" 8	27	M.	Typho-malarial fever.		3.20	89	30-103	S.	12
" 13	65	M.	Chronic diarrhoea.	9.50		92	29-888	N. W.	13
" 19	53	F.	Hemiplegia.		8.00	82	30-077	S. E.	11
" 22	23	M.	Consumption.	9.15		66	30-125	E.	8
" 28	25	F.	"		8.00	71	30-051	Calm.	
August 25	27	M.	"		11.00	73	30-076	N. E.	8
" 27	32	F.	"	3.00		66	30-231	E.	6
" 28	36	M.	"		3.00	71	30-165	E.	2
September 1	35	M.	Chronic epilepsy.	9.00		68	30-195	N. E.	3
" 16	38	M.	Chronic empyema.		1.00	64	30-004	S. W.	2
" 21	57	F.	Peritonitis.	5.50		76	30-029	W.	16
October 4	40	M.	Cancer of the stomach.		5.15	78	29-952	S. W.	10
" 8	54	F.	"	5.00		46	30-324	N.	4
" 16	60	F.	Apoplexy.	10.30		61	29-950	S. E.	3
" 17	45	M.	Chronic diarrhoea.	11.00		54	29-899	N. W.	6
" 18	23	F.	Typhoid fever.		1.20	45	30-270	W.	6
November 1	35	M.	Remittent fever.		4.45	56	30-008	S. W.	12
" 2	41	M.	Peritonitis.		5.45	55	30-217	E.	2
" 9	23	M.	Consumption.		10.00	47	30-342	S. E.	1
" 18	24	F.	"		3.00	40	30-487	E.	5
" 19	14	M.	Acute consumption.	3.00		25	30-453	N. W.	6
" 21	28	M.	Typhoid fever.		12 M.	28	30-590	N. W.	13
" 26	25	M.	Pneumonia.		4.00	27	30-433	N. E.	5
" 29	20	M.	Consumption.	5.30		35	30-040	E.	3
December 2	25	M.	"	10.00		44	30-109	N. W.	11
" 4	61	M.	Locomotor ataxia.		2.00	54	29-678	S. W.	8
" 9	42	M.	Shock from injury.	4.15		17	30-505	N. W.	6
1881.									
January 14	45	F.	Consumption.	8.00		41	29-670	S. W.	1
" 15	24	M.	"		11.55	23	30-196	E.	2
" 19	62	F.	Apoplexy.	6.00		29	30-346	E.	2
" 26	37	F.	Consumption.	12.05		27	30-286	W.	4
" 27	60	M.	"	9.30		19	30-379	W.	11
February 3	66	F.	Cancer of the stomach.		9.15	17	30-224	W.	6
" 4	1	M.	Convulsions.		12.30	14	30-254	N. W.	10
" 6	53	M.	Apoplexy.	11.15		20	30-799	N. W.	8
" 7	50	M.	Consumption.	3.00		18	30-824	N. W.	3
" 13	34	M.	Peritonitis.	5.30		31	29-799	S. W.	12
" 17	92	F.	Old age.	11.00		28	30-566	W.	5
" 21	67	M.	Diabetes mellitus.		7.30	37	30-221	N.	6
" 26	45	M.	Bright's disease.		3.00	45	29-899	E.	4
March 1	27	M.	Apoplexy.		2.00	35	29-621	N. W.	19
" 29	45	F.	Cancer of the uterus.	1.00		40	29-204	N. E.	12

TABLE OF AGE, SEX, CAUSE OF DEATH, ETC. (continued).

DATE.	Age.	Sex.	DISEASE.	HOUR OF DEATH.		State of thermometer.	State of barometer.	Direction of wind.	Velocity of wind, in miles.
				A. M.	P. M.				
1881.						Deg.			
April 1.....	63	F.	Apoplexy.....		8.30	37	29.670	W.	12
" 11.....	54	M.	Bright's disease.....		10.00	54	30.028	Calm.	
" 19.....	25	M.	Heart disease.....		10.45	52	30.109	S. W.	4
May 14.....	50	M.	Peritonitis.....		2.00	84	29.647	S.	8
" 15.....	21	F.	Consumption.....		2.00	76	29.691	N. W.	4
" 29.....	31	M.	Cerebro-spinal meningitis.....			69	29.938	E.	1
June 16.....	36	M.	Consumption.....	10.45		71	30.197	N. W.	1
July 7.....	60	F.	Apoplexy.....		1.00	80	30.075	N.	4
" 16.....	41	M.	Consumption.....		4.00	76	30.002	S.	1
" 17.....	78	M.	Old age.....			85	29.728	W.	14
" 25.....	67	M.	Chronic diarrhoea.....		4.00	72	29.942	S. W.	3
" 30.....	65	F.	Cancer of the uterus.....	8.10		80	30.150	S. E.	4
August 6.....	28	M.	Consumption.....		7.00	80	30.001	E.	2
" 11.....	79	F.	Cholera morbus.....		11.00	78	30.001	E.	2
" 15.....	91	F.	Old age.....		3.00	81	29.967	S.	6
" 27.....	26	F.	Typhoid fever.....		6.00	77	30.056	N. E.	4
September 16.....	68	F.	Chronic bronchitis.....		12.30	75	30.002	E.	2
" 17.....	74	F.	Old age.....	3.00		74	30.141	S. E.	8
" 23.....	30	M.	Typhoid fever.....	2.00		72	30.010	E.	2
" 26.....	20	F.	Pott's disease.....	11.00		71	30.000	E.	1
" 26.....	69	F.	Apoplexy.....	5.00		67	30.145	S.	3
" 26.....	81	F.	Old age.....	5.10		73	30.105	S.	3
" 30.....	30	M.	Consumption.....	1.00		73	30.105	S.	3
October 1.....	29	M.	Heart disease.....		4.00	73	30.105	S.	3
" 13.....	30	M.	Cerebro-spinal meningitis.....		2.00	87	30.230	S.	11
" 18.....	68	M.	Apoplexy.....	5.00		62	30.203	S. W.	1
" 23.....	2	M.	Scarlet fever.....		9.00	60	30.127	N.	10
" 30.....	9 mos.	F.	".....		1.00	68	30.098	W.	4
" 30.....	61	M.	Rupture of the kidney.....		3.45	68	30.098	W.	4
" 30.....	22	M.	Typhoid fever.....		4.00	68	30.004	S. W.	1
" 30.....	78	F.	Old age.....		2.30	68	30.004	S. W.	1
November 1.....	31	M.	Consumption.....		2.00	68	30.004	S. W.	1
" 7.....	55	M.	Paraplegia.....		6.00	63	30.058	N.	4
" 14.....	26	M.	Bright's disease.....	1.00		52	30.441	N. E.	4
" 16.....	40	M.	Consumption.....	5.00		43	30.117	Calm.	
" 19.....	66	F.	Cancer of the breast.....	6.15		36	30.748	N.	2
" 24.....	40	F.	Consumption.....	9.00		37	30.501	N.	1
" 25.....	71	F.	Old age.....	6.00		40	29.789	N.	6
" 26.....	28	M.	Typhoid fever.....		5.30	32	30.395	S.	6
December 13.....	61	M.	Necrosis of the sternum.....		4.15	35	30.260	Calm.	
" 25.....	55	M.	Consumption.....		4.30	45	30.286	S. W.	4
" 29.....	19	M.	".....		3.30	33	30.480	S. E.	3
" 29.....			".....		11.20	31	30.010	N.	2
1882.									
January 18.....	40	F.	".....		4.00	35	30.277	S. E.	4
" 29.....	80	F.	Old age.....		8.45	26	30.309	N. W.	12
February 8.....	33	M.	Aneurysm.....	5.00		46	30.088	S. W.	5
" 9.....	73	M.	Chronic bronchitis.....	11.45		42	29.870	N. E.	3
" 11.....	36	M.	Compound fracture.....		4.00	44	29.687	N. E.	4
" 11.....	26	M.	Typhoid fever.....		3.30	44	30.140	N. W.	20
" 12.....	23	M.	Consumption.....		5.00	58	30.478	S. W.	13
" 18.....	19	F.	Pneumonia.....		9.00	52	30.101	N.	6
" 24.....	23	M.	Consumption.....		10.30	31	30.222	N. W.	9
" 28.....	61	M.	".....			47	30.295	S.	11
March 3.....	48	M.	Pneumonia.....	11.00		57	30.073	W.	11
" 6.....	69	M.	Old age.....		9.30	54	29.905	N.	5
" 7.....	32	F.	Cancer of the uterus.....		2.00	49	30.410	N. W.	11
" 12.....	32	F.	Consumption.....		5.00	49	30.410	N. W.	11
" 16.....	30	F.	Abscess of the liver.....	6.00		42	30.075	S. E.	7
" 20.....	35	M.	Acute cystitis.....	8.00		34	30.127	N. E.	1
April 8.....	62	M.	Pneumonia.....		7.00	46	30.010	E.	3
" 14.....	63	F.	Apoplexy.....		5.00	53	30.481	S.	9
" 19.....	32	F.	Consumption.....		4.00	49	30.984	N. W.	12
" 21.....	40	F.	Cancer of the uterus.....		3.20	52	29.560	S. W.	10
" 27.....	74	M.	Heart disease.....	6.30		49	30.776	W.	6
" 29.....	25	F.	Pneumonia.....		12.00	50	30.000	N.	1
May 8.....	62	F.	Heart disease.....		11.30	57	30.278	S. W.	12
" 6.....	40	M.	Locomotor ataxia.....		3.00	61	30.232	W.	10
" 14.....	35	M.	Fracture of the skull.....		6.30	49	30.776	N. E.	5
" 17.....	29	F.	Consumption.....	12.20		51	29.660	N.	6
" 18.....	31	M.	Heart disease.....		5.00	57	30.126	E.	6
June 24.....	86	M.	Old age.....		1.35	53	30.396	S.	6
" 25.....	35	M.	Cancer of the rectum.....		6.30	86	29.968	S.	6
" 25.....	35	M.	Pylitis.....		2.00	85	29.840	N. W.	4
July 2.....	45	M.	Delirium tremens.....		2.00	69	29.997	N. W.	7
" 10.....	20	M.	Acute peritonitis.....		8.30	77	30.043	S. W.	7
" 14.....	45	M.	Pott's disease.....		5.10	77	30.044	S. W.	7
" 17.....	43	M.	Bright's disease.....		9.15	71	30.144	N.	6
" 17.....			".....		7.00	80	30.125	S.	5

TABLE OF AGE, SEX, CAUSE OF DEATH, ETC. (continued).

DATE.	Age.	Sex.	DISEASE.	HOUR OF DEATH.		State of thermometer.	State of barometer.	Direction of wind.	Velocity of wind, in miles.
				A. M.	P. M.				
1882.									
July 26.....	19	M.	Consumption.....	6.00		Deg.	30-186	S. W.	2
August 8.....	38	M.	Insolation.....	11.00		76	29-740	W.	8
" 29.....	61	F.	Heart disease.....		3.55	75	30-179	S. E.	6
" 30.....	63	M.	Consumption.....	5.30		62	30-283	E.	4
September 11.....	66	M.	Insolation.....		1.00	69	29-646	N. E.	6
" 17.....	38	M.	Heart disease.....		9.10	76	30-112	N. E.	3
October 1.....	48	M.	Secondary hemorrhage.....		12.30	71	30-266	N.	6
" 2.....	38	M.	Consumption.....		7.00	66	30-220	E.	0
" 3.....	49	M.	".....	7.00		61	30-280	N. E.	4
" 4.....	47	M.	Aneurysm.....	11.00		64	30-327	N.	4
" 7.....	17	F.	Pneumonia.....	9.30		73	30-068	S.	8
" 13.....	30	M.	Consumption.....		10.30	60	30-017	N. E.	5
" 26.....	26	F.	Typhoid fever.....		10.30	60	30-017	N. E.	5
" 22.....	60	M.	Strangulated hernia.....	6.30		52	30-253	N. E.	6
" 23.....	64	M.	Dysentery.....		1.30	57	30-192	N. E.	6
" 27.....	19	M.	Typhoid fever.....	2.30		52	30-194	N. E.	4
November 3.....	45	M.	Remittent fever.....	12.45		54	30-318	N. E.	6
" 6.....	68	F.	Cancer of the stomach.....		12.00	48	30-309	E.	3
" 23.....	38	M.	Consumption.....		9.00	49	29-984	S.	3
" 29.....	49	M.	".....		6.00	35	30-011	N. W.	4
" 30.....	56	M.	".....		8.00	33	30-321	W.	4
December 2.....	29	M.	".....	1.00		32	30-167	N.	10
" 8.....	58	M.	Locomotor ataxia.....	3.00		32	30-160	N.	12
" 9.....	46	M.	Pneumonia.....		9.00	42	29-849	S.	2
" 11.....	64	M.	Cancer.....	6.00		36	30-095	S.	1
" 24.....	34	M.	Pericarditis.....		3.00	40	29-870	N. W.	6
" 26.....	60	M.	Apoplexy.....	6.00		37	30-339	W.	6
" 26.....	20	M.	Endocarditis.....	10.00		41	30-228	S.	4
1883.									
January 1.....	28	M.	Bright's disease.....		2.00	36	30-376	N.	4
" 6.....	59	M.	".....		5.00	37	29-984	W.	3
" 9.....	32	M.	Consumption.....	9.45		30	30-100	N. E.	8
" 21.....	23	M.	Pneumonia.....	6.30		38	29-745	Calm.	
" 27.....	68	M.	Old age.....	9.30		41	29-957		
" 31.....	24	M.	Dysentery.....	1.00		44	29-881	W.	4
February 5.....	19	M.	Consumption.....		5.20	38	30-402	N. W.	9
" 7.....	30	M.	Pneumonia.....	9.00		40	29-740	S. W.	4
" 10.....	68	F.	Exhaustion.....		5.00	36	30-054	Calm.	
" 19.....	50	F.	Consumption.....		12.00	35	30-185	W.	3
" 23.....	32	F.	Acute gastritis.....	6.00		36	30-304	N. W.	5
March 8.....	19	M.	Acute meningitis.....	10.00		23	30-522	N.	4
" 10.....	19	M.	Acute enteritis.....	2.00		34	30-021	W.	12
" 30.....	25	M.	Pneumonia.....		9.00	39	29-871	N. W.	4
April 1.....	60	M.	".....	1.00		32	30-134	N.	6
" 9.....	28	M.	Exophthalmic goitre.....		10.35	49	30-339	S. W.	15
" 19.....	20	M.	Scarlet fever.....		12.00	49	30-339	S. W.	15
" 27.....	35	M.	Pneumonia.....	6.00		56	29-986	N. E.	1
" 27.....	24	F.	Ovarian cyst.....	11.45		66	29-926	W.	6
May 3.....	71	F.	Apoplexy.....		2.30	70	30-068	S. E.	1
" 7.....	34	F.	Consumption.....	4.00		56	29-183	N.	1
" 9.....	45	F.	".....	6.15		67	30-001	S. W.	6
" 13.....	62	F.	Heart disease.....	7.15		59	30-086	W.	4
" 18.....	31	F.	Diphtheria.....		6.00	72	30-258	S.	2
" 20.....	97	F.	Old age.....	10.45		64	29-769	S. E.	5
" 22.....	82	F.	".....		5.00	65	29-604	N. W.	8
" 25.....	74	F.	Acute bronchitis.....		5.00	75	30-041	S.	6
June 2.....	40	M.	Aneurysm.....	3.00		74	30-187	S. E.	13
" 5.....	77	F.	Heart disease.....	12.30		82	30-201	S. E.	5
" 13.....	64	F.	".....	4.45		75	30-158	N. E.	6
" 29.....	24	M.	Pneumonia.....	1.45		84	29-800	S. W.	12
July 3.....	37	M.	Heart disease.....	5.30		87	30-043	S.	4
" 13.....	40	M.	Edema of the larynx.....	5.30		90	29-823	E.	5
August 9.....	17	M.	Meningitis.....	5.00		67	30-123	N. E.	4
" 18.....	33	M.	Remittent fever.....	2.30		69	30-132	S.	3
" 21.....	30	F.	Dysentery.....	3.00		79	30-019	N.	7

In Table No. 4 we find, besides the ages at which death took place, the month in which it occurred from all causes. If we add these results to those reported of the former 112, in the total of 400 we have more during January, February, April, July, October, and November. June, August, September, and December show the smallest mortality. The conclusion, we think, obvious. Great heat, and what we

recognize in this locality as months during which great climatic changes take place from day to day, are exceedingly prone to hasten death.

Of the table showing the state of the thermometer at or nearest the time of death, it is only interesting to note that the highest mortality took place between 30° and 50°, inclusive. In the table of 288 the number was 121. Of the

total 400, 168. This may only point out that somewhere near is our mean temperature.

The barometric table calls for little comment. It only shows that the greatest number of deaths did not take place while the barometric tension was least—an idea that has been advanced.

I am fully aware that but little has been proved by these tables; still, if one single grain has been added to our sum of knowledge, the object has been gained. In spite of even more careful records of *one million* cases, people will go on dying only when *their* time of fulfillment shall have arrived; but if such records show that in the great majority of cases, at or about one particular hour, or during one particular condition of the barometer or thermometer, death takes place, then, I contend, something has been achieved.

SOME NEW CONSIDERATIONS

ON THE PATHOLOGY AND TREATMENT OF ACUTE PARENCHYMATOUS METAMORPHOSIS OF THE KIDNEY.

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The physiological researches of the past few years have thrown much light on the excretory functions of the kidneys, while at the same time both the histological and the pathological anatomy of the organ have been studied with great advantage. Accordingly, we are now in a position to understand better than ever before many topics that have been obscure and confusing in the matter of Bright's disease, as it is commonly known.

If, then, we have in mind the newly acquired physiological data, and, with them in view, study the pathological changes, it will be easy to see that the common term, Bright's disease, covers a number of renal lesions which fall naturally into groups that are quite distinctive, and which have, in nearly every instance, their clinical characteristics so peculiar that they can be recognized at the bedside nearly as well as at the post-mortem table.

In the present article it is proposed to take up one form of a single group, in which group the morbid changes affect the cellular elements, and it may be here stated that the data are obtained by a study of cases which have been followed from the ward to the post-mortem examination. It is hoped that the views here advanced will contribute not only to our notions of the disease from the pathological standpoint purely, but will serve to show the relation the changes have to the general condition of the patient, so that our treatment in such cases may be better directed.

It must be recognized that there are two subdivisions of the excretory apparatus of the kidney—one composed mainly of the coil of blood-vessels in the glomeruli, or Malpighian tuft, the other of a portion of the tubules, through their epithelium.

The glomeruli are generally believed to filter the water and inorganic salts held in solution; it is also thought that

sugar, albumin, and peptones pass out through the glomeruli, the epithelium of the tubules eliminating the urea and the crystalline nitrogenous substances.

Now, as the passage of solutions through an animal membrane depends to a great extent upon the pressure exerted, the rapidity with which the urine is excreted and its amount naturally vary with the blood-pressure in the glomeruli, and, consequently, the greater the pressure in the vessels, the greater will be the excretion, and *vice versa*. Accordingly, the pressure in the vessels of the glomeruli may be increased—

1. By any increase in the force and frequency of the heart's action.

2. By contraction of the arterioles at large or in areas other than those of the kidney.

3. By relaxation of the renal arterioles, either alone or with contraction of other areas.

Or the pressure may be diminished—

1. By any diminution in the force and frequency of the heart's beats.

2. By dilating the arterioles at large or in areas other than the kidney.

3. By contraction of the renal arterioles, either alone or with relaxation of other areas.

The function of the glomeruli is comparatively simple, being immediately under the control of the vaso-motor system. Physiological experiments have shown that a division of the spinal cord below the medulla greatly diminishes the flow of urine. The explanation is, that large vascular areas are cut off from their communication with the medullary vaso-motor center, which, associated with the shock to the spinal cord, produces a great fall in the general blood-pressure.

With this relaxation of the renal artery an augmented flow of urine would be expected, but the great fall in the general blood-pressure completely overbalances the effect produced upon the renal artery and diminishes the pressure in the vessels of the glomeruli. Stimulating the spinal cord below the medulla affects the cord in an opposite manner from division, but produces the same effect in reference to the quantity of urine excreted. This is explained by the renal artery becoming so firmly contracted that the general increased blood-pressure is overbalanced, the artery being, as it were, ligated, and the pressure upon the vessels of the glomeruli diminished or removed. Therefore, opposite effects upon the cord produce precisely the same action upon the glomeruli.

Section of the renal nerve produces relaxation of the renal artery, increased pressure in the capillaries of the glomeruli, and an increased flow of urine. Section of the spinal cord, after division of the renal nerve, arrests the polyuria by increasing the general capillary capacity outside the kidney, thus reducing the general blood-pressure, and in this way establishing again a normal pressure in the glomeruli. Stimulation of the spinal cord, after division of the renal nerve, still further increases the flow of urine by diminishing the general capillary capacity outside the kidney, thus increasing the general blood-pressure in the glomeruli.

Section of the splanchnic nerve, by which the kidney gets its principal nerve-supply, increases the flow of urine

by relaxing the renal artery, but not to so great a degree as division of the renal nerve only. As the splanchnic nerve is distributed to the whole splanchnic arcade, the capillaries of which are dilated, consequently the blood-pressure brought to bear upon the glomeruli does not rise so high. Stimulating the splanchnic nerve contracts the renal artery and arrests the flow of urine.

From these observations, it is quite clear that the quantity of water discharged from the kidney is governed, to a large extent, by the vaso-motor system.

The function of the epithelium, on the other hand, is much more complex; but it appears to excrete the effete material of the system, chiefly urea—the product of tissue metamorphosis.

In the experiments of Heidenhain upon the lower animals, sodium sulphindigotate, known as indigo-carmin, was injected into the blood, and, after the expiration of a certain length of time, the animals were killed and their kidneys carefully examined. In these experiments the indigo-carmin was found entering the epithelium through the rods of Heidenhain, passing out of the epithelium into the lumen of the uriniferous tubules. In other experiments a length of time was permitted to elapse after the first injection, which previous experience had shown was sufficient for the complete elimination of the pigment by the epithelium. Another quantity was then injected into the blood; in this instance the elimination of the second injection of pigment was found to be incomplete, as if the cells, exhausted by their previous efforts, were unable to perform the extra work thrown upon them. Thus, so far as indigo-carmin was concerned, it was proved that, as effete material, it was eliminated by the epithelium. These experiments were followed by those of Nussbaum on amphibia; the newt was the animal chosen for experiment, the kidney of which has a double vascular system—an arterial, from which the glomeruli receive their blood-supply, and a venous, by which its uriniferous tubules are surrounded. These two blood-supplies have no connection, the one coming from the renal artery, the other from the bifurcation of the femoral veins, an arrangement peculiar to these animals. If one of these channels is closed, what is excreted by the other can be readily ascertained. The amount of certain substances was increased, and others not normal to the urine were brought about by injections into the systemic circulation. The result of these experiments showed that water, peptones, albumin, and sugar were found in the urine previous to the ligation of the renal artery, but that they disappeared upon the performance of the operation; urea, however, continued to appear in the urine after the artery had been tied. When indigo-carmin was injected into the circulation after ligation of this vessel, no urine was found in the bladder; but the pigment could be traced through the epithelium into the lumen of the uriniferous tubules. It appears that the excretion of water, although almost entirely confined to the glomeruli, was undertaken to a slight extent by the epithelium, probably for the purpose of dissolving the urea and rendering its excretion less difficult than it otherwise would be; but, when the additional stimulus of an increased amount of effete material excited the cells to a more than

ordinary action, the flow of water from them became more abundant.

Further than this, experiments have as yet shown nothing; but even these go far to prove that, in the normal state, the glomeruli supply almost if not quite all the water and inorganic salts of the urine, while to the epithelial cells lining the uriniferous tubules is left the task of excreting the products of tissue metamorphosis. By applying these physiological data to our present pathological knowledge, we are enabled to understand many conditions heretofore very obscure.

We now approach a subject concerning which there has been much uncertainty among pathologists, and this is, the relation between parenchymatous change and inflammation.

In a general way, this term—namely, inflammation—may be said to include one or more of a series of changes occurring in the living tissues as the result of an irritation or injury, provided it does not completely destroy the vitality of the part, which may be induced in a variety of ways, either by an external or by an internal agency.

The exciting injury may be extrinsically direct when produced by chemical or mechanical irritants; intrinsically indirect when produced through the blood- or lymph-channels; indirect, as when internal organs become inflamed after exposure to cold. So-called idiopathic diseases, the causes of which are internal or imperceptible, come under the head of indirect, for in all cases the inflammatory process must be produced by some injury.

The usual order of events when an organ has been attacked is as follows: Acute hyperæmia—more accurately speaking, determination of blood to the part—followed by stasis; the escape of the liquor sanguinis; the migration of the white and a diapedesis of the red corpuscles. Also among its results may be ranked the increase in size and number of the original elements, a deposit of adventitious material, changing in character the elements attacked, and death, with its necessary loss of substance.

It occasionally happens that changes in the blood and blood-vessels constitute the only signs of inflammation, as in acute meningitis, where death ensues before the exudation of all the constituents of the blood takes place; but, for a full definition of a typical case of inflammation, all of the foregoing are necessary.

Considering all these changes essential to our conception of a true inflammatory process, it seems difficult to see what relation the change called parenchymatous metamorphosis bears to inflammation.

What actually happens to the cells is that they are overworked by an attempt on their part to free the kidney and, secondarily, the system of an excessive amount of the incompletely formed products of tissue metamorphosis, or some extraneous poison. The experiments of Nussbaum with indigo-carmin go to sustain this explanation. In this metamorphosis, as in his experiments, the epithelial protoplasm undoubtedly loses its power of elimination, and becomes altered by the effete material and caused to undergo various retrograde changes, known as cloudy swelling, fine and coarse granular metamorphosis, and fatty transformation.

With these introductory explanations, we come to our

first division of this group of renal lesions, commonly classed as Bright's disease.

ACUTE PARENCHYMATOUS METAMORPHOSIS OF THE KIDNEY.—This disease, commonly known as acute parenchymatous nephritis, is that lesion of the kidney in which the epithelial cells lining the uriniferous tubules undergo metamorphic changes—namely, cloudy swelling and fine and coarse granular and fatty infiltration—but in which there is no change in the blood-vessels or interstitial tissue.

This metamorphosis occurs in connection with, or as a complication of, scarlet fever, pneumonia, diphtheria, small-pox, typhus fever, typhoid fever, yellow fever, cholera in bad cases, puerperal fever, septicæmia, pyæmia, and acute yellow atrophy of the liver. This condition may possibly be met with during the early stage of cirrhosis of the liver, severe cases of jaundice, and various pigmentary diseases. The exact relation of the pathological condition to these three last conditions is as yet somewhat uncertain. This lesion is also the result of poisoning by arsenic, phosphorus, antimony, and copper; and, in some rare cases, is said to develop without known cause. This list comprises those diseases in which the exciting cause is some original and impalpable poison, which greatly interferes with the normal nutrition of the body, diminishing the perfection of its products and increasing their amount and rapidity of formation. The incomplete change thus produced differs from the normal physiological process in the large amount of effete material generated and the great rapidity with which it appears in the system. Great irritation is necessarily produced in the whole animal economy by the combined action of the original poison and of those incomplete products of tissue metamorphosis circulating in the blood; and to their combined action the phenomenon known as elevation of temperature is believed to be due. However this may be, the kidneys, which are the great eliminating organs of this variety of waste products, endeavor to remove from the body, by means of their epithelial cells, the irritating substances which are producing such deleterious effects upon the system. At first they may be successful, but, as the labor thrown upon them is increased, they may become exhausted (as in Heidenhain's second injection of indigo-carmin), and the process of excretion is less complete. Their protoplasm becomes infiltrated with minute particles of irritating substances, such as effete material, pigments, etc., which cause them to swell and to lose their transparency. The weakest of them undergo a progressive change which ultimately results in a complete granular or fatty metamorphosis, and final destruction of their vital property. This process is certainly not inflammatory, but one of transformation and death, which is caused by an unduly prolonged struggle on the part of the epithelial cells to accomplish a work too great for their capacity. As the disease advances, the cells fall from their place on the wall of the uriniferous tubules, and appear in the urine as casts and cast-matter. The tubules, thus deprived of their epithelial cells, have in some places only basement membrane to form their wall; but, as only isolated cells undergo degeneration, the damage done is repaired according to the general law of regeneration and proliferation of the epithelial elements, and the wall of the

tube is restored to its normal condition after the complete subsidence of the disease, provided the chronic form is not developed.

A kidney in the condition of acute parenchymatous metamorphosis is enlarged, but it may be normal in size in some few cases. The capsule is normal in thickness, does not adhere to the underlying tissue, and leaves the surface of the kidney perfectly smooth upon its removal. The cut surface in the early stage presents no marked change by which this lesion can be positively recognized by the unaided eye. Later on it is pale, and the pyramids are less distinct than normal, but to the unaided eye they appear more distinct on account of the abnormal pallor of the cortical portion.

This lesion develops four degrees of change in the renal epithelium: *First, Cloudy Swelling.*—The condition known as "cloudy swelling" is one in which the elements are swollen by the imbibition of an albuminous fluid, and the protoplasm has become turbid. *Second* in sequence is the stage of finely granular metamorphosis, in which the epithelium is cloudy, but also infiltrated with fine granular particles, some of which are oil globules of minute size, and others granular detritus; probably from the incomplete products of tissue metamorphosis drawn from the blood, and in part from the further destruction of the epithelial protoplasm itself. *Third* comes the coarse granular change, which is simply a more advanced degree of the former, with more abundant and larger fat droplets. The *fourth* is the fatty transformation, where the protoplasm is entirely destroyed and replaced by fat globules, causing a destruction of their substance and an abolition of their function.

It seems quite probable that the cloudy and mucoid change is due to the retention of a small quantity of effete material in the protoplasm, thus causing this imbibition and transformation of the protoplasm. The fine granular, too, is a further change, due to the retention of a quantity of these irritating substances now perceptible in the cell, and a commencing disintegration of the protoplasm with a development of minute fat droplets. The retention of a still larger amount of effete material produces the coarsely granular metamorphosis, or a more advanced disintegration of the protoplasm, and an increase in the size of the fat droplets. In the last (*fourth*), or fatty change, so large a quantity of the products of incomplete tissue metamorphosis, pigments, etc., remains in the cells that their normal outlines are obliterated, and the protoplasm is now destroyed by fatty degeneration.

Early in the disease, the cells having swollen rapidly, while the kidney capsule remains unstretched, the lumen of the tubules is entirely occluded, and under the microscope the tubules are tortuous instead of straight. This, of course, refers to the straight tubules, and not to those normally convoluted; the latter, however, are considerably distorted.

In the milder forms the change in the epithelial cells is confined principally to the cells of the cortical layer and those lining the glomeruli.

In more advanced cases the cells of the pyramidal tubules also become involved. The degree of transformation

of the epithelial cells and the extent of territory implicated will depend wholly upon the intensity of the cause and its duration.

After the lesion has lasted for some time, what remains of the lumen of the tubules may be found to contain single or masses of transformed and desquamated epithelial cells, which appear like the material of which casts are made up.

Various forms of casts may occasionally be found in the lumen of the tubules.

The stroma is not involved, and the blood-vessels remain unchanged.

This lesion occurring, as it does, in connection with severe diseases, or as the result of some of the acute attacks of metallic poisoning, the symptoms referable to the nephritic metamorphosis are not well marked at first. Ordinarily, the symptoms of nephritic disease may be classified under four headings—three rational, and a urinary. The former are divided into cephalic, alimentary, and general. The cephalic are occipito-frontal headache, contraction of the pupils, injected conjunctivæ, lesions of the retina and optic nerve, drowsiness, convulsions, and coma. The neuro-retinal lesions will be considered more minutely in studying the lesions of the kidney, in which they are more frequently met with, for in this form they are rarely seen.

The alimentary symptoms are dyspeptic in character; they are nausea, vomiting, loss of appetite, disgust for food; diarrhœa is often a prominent symptom.

Those classed as general are œdema, commencing first in the subcutaneous connective tissue under and around the inferior eyelid, œdema of the inferior extremities, watery effusions into all the serous cavities, œdema of the superior extremities, and general anasarca. Œdema glottidis may occur. If the disease lasts for any length of time, a peculiar waxy, almost translucent, pallor of the skin may be developed. This, however, is seldom seen, except in that form following the chronic metallic poisoning.

With this form a large number of the rational symptoms are masked by the severe symptoms of the disease which it complicates; but those that do attract attention are usually œdema of the eyelids and feet, undue severity of the cerebral symptoms of the primary disease, and a diminution in the quantity of urine passed *daily*. These symptoms are followed speedily by those of a more acute character. The patient complains of a severe headache and drowsiness, rapidly followed by convulsions and coma. There may be associated with these cerebral symptoms, or independently, some nausea and irritability of the stomach, which often usher in severe vomiting and diarrhœa. The œdema may now become very marked and be followed by dropsy of all the large serous cavities. Dimness of vision also occurs in some of these cases, but is due to interference with the optic centers, and not to any lesion of the optic nerve or retina. As the disease progresses, the symptoms become more urgent, the drowsiness is followed by stupor and delirium, the urine may be entirely suppressed, and the patient lapse into a state of coma which is usually followed by convulsions and death.

During the course of the disease, which seldom lasts more than a few days, the cephalic, alimentary, and general

symptoms may not be associated as above described. In some cases, especially those which occur complicating scarlet fever, pneumonia, typhoid fever, and other acute febrile diseases, only those symptoms referable to the nervous system appear, and headache, accompanied by dimness of vision, drowsiness, stupor, delirium, and coma, follow each other in rapid succession; and, if the disease does not take a more favorable course at this point, convulsions ensue, speedily followed by a fatal result. In other cases the alimentary symptoms present themselves, and these cases are the ones which are most apt to terminate in chronic parenchymatous metamorphosis; they are the result of mineral poisoning.

Urinary symptoms are always present in all forms of the disease. The urine is high-colored, and in reaction the specific gravity is above normal, usually varying between 1.025 and 1.030; but, when the quantity passed is considered as compared with the normal daily quantity, the specific gravity is found to be below normal. Albumin is always present, and in very great quantities as a rule, but in some appearing only as a trace, or to the amount of one or two per cent., by volume; in other cases to the amount of from ten to fifty per cent.; while in the most severe types of the disease it may completely solidify the urine when boiled, so that, if the test-tube is inverted, no water flows away.

On microscopic examination early in the disease, small hyaline, epithelial, nucleated, and fine granular casts and granular *débris* are seen, while at a later stage the coarsely granular and fatty casts make their appearance; as the disease advances, the casts will increase in size.

The *diagnosis* is readily made by remembering the causes, and by an accurate urinary analysis in reference to casts. The only disease for which it might be mistaken is acute diffuse nephritis. In the latter disease we find blood and blood-casts in the urine; but in this lesion neither occurs.

The *prognosis* is always grave, and especially so when this lesion exists as a complication of acute diseases. In scarlet fever, if convulsions occur, the patient rarely, if ever, recovers; while in pneumonia, diphtheria, typhoid fever, etc., the first symptom of acute parenchymatous metamorphosis renders a favorable termination almost impossible, although there are instances in which patients recover even with this severe complication; they are, however, rare.

In those cases which result from mineral poisoning the immediate danger is not so great; but the disease is very apt to lapse into the chronic variety, which ends fatally in the course of a few years.

In *treating* this lesion of the kidney, its method of production should be kept constantly in view. It should be remembered that it is not of an inflammatory nature, but that it results from too much work being thrown upon the kidney, and that, in its efforts to relieve the system, it undergoes this metamorphosis. With this light upon the subject, the great object in the way of treatment is to prevent this excessive amount of work being forced upon this gland.

There is but little doubt that the idea that elevation of temperature or heat is the damaging element in disease has been much overestimated, and the *cause* of the increased

heat been too much neglected. The increase of body-heat should only be looked upon as a *symptom*, produced in part by the irritation of the original poison, and in part by the too abundant and incomplete products of tissue metamorphosis, excited by the poison and circulating throughout the system.

All we can do in reference to neutralizing the original poison is to make the hygienic surroundings as perfect as possible, and to supply the patient with a large quantity of fresh air.

The original poison, in a measure, is probably eliminated from the system by the kidneys, and also aids in damaging the epithelial protoplasm.

With such a condition as this, the kidney makes an effort to rid the system of this excessive amount of effete material, while at the same time it receives less nutriment than in health, and, consequently, is very likely to suffer irreparable damage.

The application of cold to the body in such conditions as these, according to well-established physiological laws, still further interferes with tissue metamorphosis and adds new fuel to the fire. Many cases have undoubtedly developed a fatal renal complication in this way. It often happens that, following a cold pack or bath, the cerebral symptoms increase in severity, the temperature rises higher, and albumin presents itself in the urine for the first time; a speedy and fatal termination soon ensues by an induced renal complication. A striking example of this kind was observed in a case of *sunstroke*. In this case, at the commencement of the attack there was a trace of albumin in the urine; but, following the repeated application of cold to lower the temperature, the quantity of albumin rose to 50 per cent. by volume, and all the urinary symptoms of acute parenchymatous metamorphosis presented themselves. Subsequent post-mortem examination confirmed the diagnosis in regard to the renal lesion. Remembering these facts, the kidney should demand our first attention in all these severe diseases and in cases of acute metallic poisoning, but especially in the former. Every effort should be made to aid the kidney during this severe strain and guard it against this transformation, and not wait until this metamorphosis has actually developed and then try to cope with so formidable a malady.

In these cases our attention should be directed to the other excretory channels—namely, the skin and alimentary tract—and every effort exerted to cause them to perform the largest possible amount of work. By so doing, we relieve, to a considerable extent, the increased strain upon the kidney.

Cold applications to the skin should be avoided. The skin should be kept moist and active by bathing in tepid water, or with tepid water to which a little alcohol has been added.

In bathing the sick, one rule should be rigidly enforced. After sponging a portion of the body, the nurse should rub the skin of that part perfectly dry with the bare hands before another portion is bathed. There is nothing more uncomfortable than to be left wet and clammy after bathing. On the other hand, nothing is more refreshing and

soothing to a patient than such a bath, provided the skin is dried in the way here suggested. The skin is also rendered more active—one great object to be attained.

Diaphoretics may also be used to advantage, *jaborandi*, or its alkaloids, standing first upon the list for promptness and certainty; but in these severe forms of disease its use would be contra-indicated, as it is sometimes depressing in its effects. The liquor ammonii acetatis, or spiritus ætheris nitrosi, may be found serviceable in keeping up free activity on the part of the skin; they also act slightly as diuretics, especially the latter.

Alcohol, which is often called for in these febrile diseases, acts as a diaphoretic and diuretic; it also retards oxidation, thus being of service in three ways.

The bowels should be acted upon as freely as the pre-existing condition will admit. In typhoid fever, little can be looked for in this direction; aside from this fever, yellow fever, and cholera, they should be moved at least once every day.

Treatment referable to the kidney is of the greatest importance. The main object is to increase the watery constituents to the maximum, so that the effete material necessarily passing through the renal protoplasm shall be in as dilute a solution as possible.

To accomplish this object, large draughts of water, demulcent drinks, and various mild mineral-waters, should be freely administered.

As medicinal diuretics, *tinctura ferri chloridi*, *digitalis* and its preparations, are the only ones to be used. The tincture of iron is an invaluable remedy, acting as a non-irritating diuretic, and enables the blood to carry more oxygen, thus aiding in bringing about a more perfect tissue metamorphosis. It is most serviceable as the disease advances and tends to assume a more persistent form.

Digitalis and its preparations are about the only safe remedies during the early stages of this lesion. It is a non-irritating diuretic, and acts principally by contracting the arterioles, and possibly by stimulating the heart and increasing the general blood-pressure; in this way we increase the pressure upon the glomeruli. It probably has less effect upon the renal arterioles than on the rest of the circulatory system, otherwise we should diminish instead of increasing the flow of urine. Further investigation will probably show that it only acts when there is venous congestion of the inter-tubular plexus of veins. Some have advanced the idea that this drug has a specific and yet unexplained action directly upon the kidney, especially upon the Malpighian tufts. The condition of this inter-tubular plexus may be the cause of this so-called specific effect.

The potassium salts are contra-indicated as diuretics, as they depress the heart's action and relax the arterioles. Their action as diuretics is ascribed to their power to increase oxidation and tissue metamorphosis, and in this way force more work upon the renal epithelial cells. They are therefore injurious for three reasons: *First*, they weaken the heart; *second*, they relax the whole arterial system; and, *third*, they increase the effete material to be thrown off by the epithelial protoplasm.

When opiates are used in this form of renal lesion as

nerve-sedatives, a fatal termination often results, if it is not the rule. In some forms of acute uræmia, morphine, hypodermically administered, may be followed by good results, but usually it is not considered a safe remedy.

The application of dry cups to the loins, followed by warm poultices, will be found very serviceable, especially if the renal symptoms become at all severe.

ON THE PREVENTION AND TREATMENT OF PUERPERAL FEVER

FROM AN ÆTIOLOGICAL STANDPOINT.

BY W. D. SCHUYLER, M.D.

(Continued from page 235.)

TREATMENT OF THE PUERPERAL WOMAN, WITH REFERENCE TO
THE PREVENTION OF THE PUERPERAL FEBRILE DISEASES.

HAVING determined by the foregoing, first, that the puerperal condition in itself, and uninfluenced by heterogeneous causes, in a general and extended sense, is not greatly prone to take on the puerperal febrile maladies, and, second, that these febrile maladies include, ætiologically considered, two essentially different diseases, each depending upon its own special and distinct pathogenesis, the indications for their prevention become reasonable and clearly differentiated, and their fulfillment correspondingly easy.

First. Treatment of the Puerperal Woman in Private Practice.—It has been shown that the puerpera, in a general and extended sense, especially as her tendencies are manifested in private practice, is not liable, without exposure to the proper contagium, or unless for some other especial cause, to develop the puerperal febrile maladies—namely, either puerperal fever or puerperal septicæmia. There is, therefore, no indication for the application of elaborate or unusual preventive measures against their occurrence in her case.

Furthermore, having been taught to rely with confidence upon Nature's methods, having been influenced by the general perfection of those methods to accept her teachings as precedents, and, more, having been led to consider her functional operations—where such have not been counteracted by morbid causes—as safe and conservative for the individual and the race, I can not now think that, with respect to her most important function—the process of generation—there should naturally inhere such marked susceptibility to danger, or that her manner of cleansing and restoring the genital apparatus after parturition is not safe and salutary. Hence, upon the ground of induction, of general experience, and of my own practice, I can not accept the teachings of Dr. Thomas, that every woman who is about to bring forth should be treated as one about to go through the perils of a capital operation, or that in every case the offensive fluid called lochia poisons—or is likely to poison—the system of the parturient woman through her lacerated and unprotected genital tract. And, therefore, I can not acknowledge that the prophylactic measures he advises should be adopted in all midwifery cases, or that it borders on criminality not to subject women in private practice, even among the wealthy, who can command every safeguard, to systematic aseptic rules.

The view and deduction just set forth relative to the non-susceptibility of the puerperal woman in general to contract the puerperal febrile maladies, and the consequent non-necessity for subjecting her to systematic aseptic rules, apply to the great number of puerperæ met with in *private practice, who are to be attended by a physician having private patients only.*

Where, however, a puerperal woman of private life is to be confined in a lying-in institution—especially in an institution where puerperal fever is endemic, or where she is to be attended by a physician having an infected lying-in service, or a physician who is a curator of dead subjects, or who is a consultant who has been exposed to the fever contagium or to surgical erysipelas—then, under either condition, the case is different, and the private patient, so considered, takes on the status of one who is in an exposed lying-in institution, or who resides in an endemic habitat; and the preventive indications in her case correspond with the measures indicated under any degree of exposure.

For the private, non-infected, non-exposed patient, on the one hand, certain measures are always justifiable, and should be secured where time and convenience allow of it. Her confinement-chamber should be selected for its sunny and cheerful aspect; it should be as roomy as may be, and easily ventilated. In selecting it, smells should be avoided, and, if possible, a room should be chosen having no stationary water-fixture. If a stationary basin can not be avoided, then such fixture should be tightly closed, not only by keeping the stopper in the bottom of the basin (which so many think sufficient), and the latter full of water, but the overflow escape into the waste-pipe should also be closed with corks. Furthermore, to insure safety, the basin should be emptied and renewed daily. And these precautions—from non-observance of which I have witnessed slow convalescence, unusual debility, deranged nutrition, constipation, prolonged lochial discharge, and the occurrence of painless and extensive mammary abscess—should be continued for two months, or longer, or until a convalescent condition is established. The matter of sewer-malaria I feel has not yet received that attention which its importance in a city, where so much organic matter goes to waste, demands. Strict attention to personal cleanliness for the patient should never be neglected, and all refuse or excreted matter should be immediately removed. The woman's diet should be looked after according to the indications her condition suggests, whether it demands much or little food, tonics, or the like; and her functional requirements should receive prompt attention. If there is any reason for apprehending that infective influences are present from any source, *a small quantity of sulphur may, with advantage and little discomfort, be burned in her room daily.* Attentions during labor do not require special directions, beyond the fact that all should be accomplished with the least fatigue to the woman and with the least violence to the parts engaged. As a general precaution against puerperal septicæmia, *the completion of labor should include, in all cases, a thorough evacuation of the womb of placenta, membranes, and clots, and the induction of a firm tonic contraction of that organ.*

But for the hospital patient, on the other hand, or for one whose physician is a visiting surgeon at a lying-in institution, not only are *all prophylactic measures*—besides those general precautions just referred to—proper, but it must be admitted that *their neglect "borders very closely upon criminality."* It is upon the ground of an especial requirement for consultants and hospital physicians, and their appreciation of the necessity for extraordinary measures in hospital and in private practice alike, that we are able to reconcile as reasonable the necessity—*from their point of view*—of the elaborate prophylactic measures urged by Dr. Thomas for all cases, and the equally unnecessary precautions (for the general practitioner) advocated and practiced by Dr. Garrigues.

While upon this subject, and before closing, I would remark, as already alluded to, that I do not consider the rules laid down by either of the gentlemen mentioned injurious; on the other hand, they would probably be productive of benefit, if applied in all cases; and their presentation to the profession must result in much good. I have only endeavored to show that, in the great majority of private cases, they are unnecessary, that therefore they are not reasonably demanded, and that, for this reason, a neglect to carry them out is, as before stated, not a criminality.

Second. *Prevention of Puerperal Fever.*—For the prevention of this form of puerperal disease, (1) we must provide against the development of the contagium; (2) the contagium having been developed in any certain region or habitat, and being in such habitat endemic or epidemic, we should protect the puerperæ of such region or habitat against an attack, and equally we should prevent its spreading to puerperæ who are within such contagious environment.

To prevent the development of the specific contagium of puerperal fever, we must entertain clear notions as to its origin. While this point has already received attention, it may be referred to again in this connection. This contagium has been recognized as epidemic, and, evidently, it develops anew in lying-in hospitals. From these sources it is propagated by contagion, or is contracted by infection.

(a) That it originates *de novo* in the wards of lying-in hospitals, especially if to the emanations which are developed therein is added the malaria (nosocomial) of a general hospital, appears most conclusive from its frequent reappearance in Bellevue Hospital during the past twenty years, and until that service was removed to the Emergency Hospital; and from its appearance in the latter hospital from its opening up to the present time, as also from its reappearance, or almost continuous presence, in Maternity Hospital since the origin of that institution.

Its probable mode of development in the Emergency Hospital has already been alluded to, and, as a matter of pathogenesis, is very interesting, and instructive. The lying-in ward of the Emergency—according to information derived by me at the office of Bellevue Hospital—is twenty-five by fifty feet, and has high ceilings. As already stated, it is held that, if over-crowding is not practiced in this ward, if not more than fifteen puerperæ are accommodated therein at any one time, puerperal fever (unless brought in from outside) will not develop in it. But if over-crowding is

practiced, and if from twenty to thirty patients are confined therein at one time, soon malarial symptoms begin to be manifest, then puerperal fever is developed, and still later puerperal, peritonitic, and contagious fevers occur.

From this interesting observation of very probable fact—which quite accords with general opinion upon this point—an aggregation and intensification of hospital lying-in emanations from over-crowding, combined with bad ventilation, and very probably, where lying-in wards form a part of a general hospital, with emanations from various noxious, septic, zymotic, cadaveric, or erysipelatous influences—in a word, with nosocomial malaria—are competent to develop it anew.

(b) What the special influence is that develops this poison when it occurs epidemically—as it has prevailed at various times and in various places—it is not so easy to determine. But that malaria, of some peculiar character, gives rise to the first manifestation of trouble, which trouble anticipates a full but later development of contagium—as in hospital cases—there can be little doubt.

Therefore, the indication for the prevention of the development of the contagium of puerperal fever in lying-in institutions is to *avoid over-crowding, and, at the same time, provide a free, ample, and adequate ventilation.* Again, as fumigation with burning sulphur evidently kills this poison, therefore daily disinfection of lying-in wards by this means, especially where over-crowding is unavoidable, should be practiced. Furthermore, as a preventive of the puerperal maladies, and as a wise and humanitarian measure to prevent a normal function from degenerating into a dangerous pathological condition, *all lying-in institutions should be removed from, and be for ever entirely disconnected with, general hospitals.* If the evidence which may be obtained by studying the histories of the lying-in services at Bellevue, Emergency, Charity, and Maternity Hospitals is competent upon which to base correct judgment, it is a matter of the greatest importance that the lying-in services in connection with those institutions should be discontinued. Considering the number of young and healthy mothers who have contracted puerperal fever, and hopelessly succumbed to it, under the management of combining a lying-in and general hospital under one roof, who might otherwise have lived out their days, and some of them probably been alive yet to-day, it is plain that the obstetric division of the city's eleemosynary work should be located in a home of its own in a salubrious environment, and away from general hospital influences.

Not knowing definitely what are the ætiological influences governing an outbreak of epidemic puerperal fever, we can not anticipate the disease by preventive measures. We can only adopt measures to prevent the puerperæ of an epidemic region—as soon as the boundaries of such are determined—from having the malady. This is best accomplished by their removal. While successful treatment of these cases may be practiced by the measures advised by Dr. Thomas or by Dr. Garrigues, yet, as there are chances of failure by any aseptic plan through some miscarriage of measures, the only safe procedure is that just advised.

In all cases, where possible, puerperæ should be removed from every endemic, epidemic, or infected habitat.

The manner in which puerperal fever is generally spread is by contagion. The indication for the prevention of this result is equally clear, i. e., to prevent exposure of the woman to the poison by herself or by its conveyance to her by another person. A woman rarely exposes herself. That puerperal fever may be conveyed to a parturient woman by a third person, by the doctor, while it may still be a question, is quite probable. In view of the physician being the possible carrier of the contagion, it is right where he has been exposed that he should act upon the affirmative of such possibility, and proceed to carry out either one of two preventive measures: (1) He should employ a substitute to attend to his obstetric practice for the time, or (2) he should treat his patient preventively, according to Dr. Thomas's or Dr. Garrigue's plan, or to both combined, for in this matter he can not be over-zealous.

Third: *For the prevention of puerperal septicaemia* the indications are also causal. The causes of this idiopathic puerperal malady are found in varying forms of autogenetic infection, or may reside in inoculation. The former possibly may be due to a retained decomposing placenta, to decomposing membranes, to degenerate lochia, or to decomposing retained blood, either or all of these becoming septic and infecting the woman by absorption through some laceration or wound of the generative tract or at the placental site. As septicaemia may occur from retained placenta after abortion, where no laceration of the generative tract occurs; and, on the other hand, as frequent lacerations occur, and as placenta and clots are frequently retained and undergo more or less decomposition, without setting up puerperal septicaemia, we may conclude that some other cause, a general morbid constitutional condition, rather than conditions wholly local, determines the disease. The general causal condition may be some predisposing dyscrasia, some state of physical depression, or an existing disease; the patient may be suffering from Bright's disease, or her system may be depressed and her nutritive functions imperfect from malarial poisoning or other cause. Her social condition may be the cause of depression or anxiety, or her surroundings may be unfavorable and may contribute to septic or zymotic states.

The preventive measures to be practiced against the occurrence of puerperal septicaemia are identical with those which should be observed in every case of labor for the protection of the woman against the *general, or usual*, dangers of child-birth; they are therefore not to be considered as special.

They are: First, the womb should be thoroughly emptied of placenta, clots, and membranes; second, the organ should be caused to undergo firm contraction, as the completion of the third stage of labor. In general, these measures are all that is required; but, where other conditions, evidently favorable for promoting the development of sepsis and zymosis, and therefore septicaemia, exist, they must be met by the measures indicated by each condition. Uræmia, general malaria, nosocomial malaria, erysipelas, or any special dyscrasia, should receive especial and prompt attention. If a woman's condition is markedly adynamic, and her nutritive status is such that a low form of vital action is going

on; if the condition is thought favorable for the development of septicaemia, it should be corrected by a tonic, stimulant, and promptly supporting course.

If there are reasons for concluding that septic development is going forward, whether within the vagina or uterus, from whatever cause, then measures should be adopted at once to prevent the absorption of putrid material and its results. A speculum examination should immediately be made, to confirm such diagnosis, to determine the site and the nature of the trouble, and the offending material should forthwith be removed. If bits of placenta, membranes, or clots are found in either portion of the generative tract, they may be removed by forceps, by scraping, or by any other procedure, and, after such removal, the affected part should be carefully washed out with a bland, non-irritating, aseptic injection. If the mass creating the morbid state is in the vagina, it will not be necessary to carry the injections into the womb; but, if the latter cavity is the seat of the trouble, then it should be injected without hesitation.

A septicæmic action is generally, if not always, developed in a system depressed; hence, while the local trouble is being cared for, a general tonic and alterative treatment is necessary.

After these general measures have been applied, and one thorough washing of the canal has been given, I would counsel no further interference, the use of no more injections, until either new symptoms arise or a continuation of those first observed indicates that the morbid action is not checked but is going forward, when further cleansing by aseptic injections should be practiced.

(To be concluded.)

Book Notices.

Medical Annals of Baltimore, from 1608 to 1880, including Events, Men, and Literature. To which is added a Subject-Index and Record of Public Services. By JOHN R. QUINAN, M. D., etc. Baltimore, 1884. Pp. 274.

At a special meeting of the Medical and Chirurgical Faculty of Maryland, held October 13, 1880, in commemoration of the founding of the city of Baltimore, the duty of writing the history of the medical men of the city during the preceding century and a half was assigned to the author of this volume.

So far as we are able to judge, the task has been carefully performed, and the medical history of the country has doubtless received a valuable addition through the publication of this volume.

Shakespeare as a Physician. Comprising every Word which in any way relates to Medicine, Surgery, or Obstetrics, found in the Complete Works of that Writer, with Criticisms and Comparison of the same with the Medical Thoughts of to-day. By J. PORTMAN CHESNEY, M. D., Ex-secretary, Medical Society of the State of Missouri, etc. Chicago, St. Louis, and Atlanta: J. H. Chambers & Co., 1884. Pp. 226.

This is certainly a unique, and we may add interesting, contribution to Shakespearean and medical literature as well.

It will decidedly repay a perusal.

The Parents' Medical Note-Book. Compiled by A. DUNBAR WALKER, M. D., C. M. London: H. K. Lewis, 1884. Pp. 26.

This little book is compiled for the purpose of enabling parents to keep a record of the diseases which their children pass through. The object is a good one, and useful deductions may be derived from such records.

BOOKS AND PAMPHLETS RECEIVED.

On Tumors of the Bladder; their Nature, Symptoms, and Surgical Treatment. Preceded by a Consideration of the Best Methods of Diagnosing all Forms of Vesical Disease, including Digital Exploration and its Results. With Numerous Illustrations. By Sir Henry Thompson, F. R. C. S., M. B. Lond., Surgeon Extraordinary to H. M. the King of the Belgians, etc. Philadelphia: Blakiston, Son & Co., 1884. Pp. 111.

Hand-book of the Diagnosis and Treatment of Skin Diseases. By Arthur Van Harlingen, M. D., Professor of Diseases of the Skin in the Philadelphia Polyclinic and College for Graduates in Medicine, etc. With Two Colored Plates. Philadelphia: P. Blakiston, Son & Co., 1884. Pp. xii-282.

Kefyr, kaukasisches Gährungsferment und Getränk aus Kuhmilch. Seine Geschichte, Literatur, Zubereitung, Zusammensetzung, sowie physiologische und therapeutische Bedeutung. Von Dr. W. Podwysotszki (Sohn). Aus dem Russischen nach der dritten Auflage übersetzt von Moritz Schulz, Arzt beim 114 kais. russ. Infanterieregiment. St. Petersburg: Carl Ricker, 1884. Pp. xi-78.

The Galvano-caustic Method in Nose and Throat. [Reprint from the "St. Louis Courier of Medicine."] A Case of Intrathoracic Aneurysm, with Special Comments on the Laryngeal Phenomena. [Reprint from the "Weekly Medical Review."] By J. C. Mulhall, M. D., St. Louis.

Report on Tuberculosis. By D. N. Kinsman, M. D., of Columbus, Ohio. [Reprint from the "Transactions of the Ohio State Medical Society."] 1884. Pp. [11]-1055.

The Huroan Element in Sex: being a Medical Inquiry into the relation of Sexual Physiology to Christian Morality. By Dr. Elizabeth Blackwell. [Second Edition, revised and enlarged. London: J. & A. Churchill, 1884. Pp. 9 to 58, inclusive.

Index-Catalogue of the Library of the Surgeon-General's Office, United States Army. Authors and Subjects. Vol. V. Flaccus—Bearth. Washington: Government Printing Office, 1884. Pp. [11]-1055.

A Practical Treatise on Fractures and Dislocations. By Frank Hastings Hamilton, A. B., A. M., M. D., LL. D., late Professor of Surgery in Bellevue Hospital Medical College, etc. Seventh American Edition, revised and improved. Illustrated with Three Hundred and Seventy-nine Woodcuts. Philadelphia: Henry C. Lea's Son & Co., 1884. Pp. xxxi-1005.

London Water Supply. Report on the Composition and Quality of Daily Samples of Water supplied to London during the Year 1883. By William Crookes, F. R. S., William Odling, M. D., F. R. S., F. R. C. P., Professor of Chemistry in the University of Oxford, and C. Meymott Tidy, M. B., F. C. S., etc., Professor of Chemistry and of Forensic Medicine at London Hospitals, etc.

The Lock-Jaw of Infants (Trismus Nascentium), or Nine-Day Fits, Crying Spasms, etc. Its History, Cause, Prevention, and Cure. By J. F. Hartigan, M. D., Washington, D. C., Member of the American Medical Association, etc. New York: Bermingham & Company, 1884. Pp. 7-123. [Price, 75c.]

Remarks on the Pathology and Treatment of Tubal Nephritis. By James Barr, M. D., L. R. C. S. Edin., Physician to the Stanley Hospital, Liverpool, etc. Pp. 203-234. [Reprint from the "Liverpool Medico-Chirurgical Journal," July, 1883.]

'Report on the Causes and Mechanism of the Cardiac Impulse. By James Barr, M. D., etc. Pp. 1-40. [Reprinted for the Author from the "British Medical Journal," July 26, 1884.]

Announcement of the Regular Session of 1885 of the Hospital College of Medicine, Medical Department of Central University, Louisville, Ky.

Restriction and Prevention of Diphtheria. Document issued by the Michigan State Board of Health.

Restriction and Prevention of Scarlet Fever, etc. Document issued by the Michigan State Board of Health.

Laws of Michigan relating to the Public Health, in force September 8, 1883.

Transactions of the Michigan State Medical Society, for the Year 1883.

Transactions of the Medical Society of the State of California, for the Years 1883 and 1884.

Transactions of the Medical Society of the State of West Virginia, Seventeenth Annual Session, 1884.

London Water Supply. Report, etc., No. xliii.

Irritation of the Prostate. By R. Harvey Reed, Mansfield, O. [Reprint from the "Columbus Medical Journal."]

Cryptorchidism, with an Illustrative Case. By Robert W. Johnson, M. D. [Reprint from the "Transactions of the Medical and Chirurgical Faculty of Maryland."]

Poisoning by Cannabis Indica, etc. By A. B. Cook, A. M., M. D. [Reprint from the "American Practitioner."]

Cases of Interest. By W. H. Carmalt, M. D., New Haven. [Reprint from the "Proceedings of the Connecticut Medical Society."]

Suprapubic Lithotomy. By W. S. Tremaine, M. D., etc., Buffalo, N. Y.

Hospital Sunday and Hospital Saturday: their Origin, Progress, and Development; together with Suggestions for making both Funds more useful to the Hospitals. By Henry C. Burdett, Founder of the Home Hospitals Association for Paying Patients, etc. London: Kegan Paul, Trench & Co., 1884. Pp. 35. [Price, 6d.]

The Influence of Lung Retractivity in Pleurisy and Pneumothorax. By F. Donaldson, M. D., etc. [Reprint from the "Transactions of the Medical and Chirurgical Faculty of Maryland."]

A Periodical Painful Affection, etc. By R. Harvey Reed, M. D., Mansfield, O. [Reprint from the "Journal of the American Medical Association."]

Preventable Blindness. By Samuel Theobald, M. D., etc. [Reprint from the "Transactions of the Medical and Chirurgical Faculty of Maryland."]

Abdominal Surgery. Four Cases, with Comments. By Joseph Eastman, M. D., etc. [Reprint from the "Transactions of the Indiana State Medical Society."]

Later Antiseptics in Private Surgical Practice. By Dr. Powell, Edgar, Ont. [Reprint from the "Canadian Practitioner."]

Catalogue and Announcement of the Medical College of Virginia, Session of 1884-'85.

Announcement of the Medical Department of the University of Georgia, Session of 1884-'85.

Announcement and Catalogue of the College of Physicians and Surgeons, Boston, Session of 1884-'85.

Announcement of the Kentucky School of Medicine, Session of 1885.

Announcement of the Western Reserve University Medical Department, Cleveland, O., Session of 1884-'85.

Catalogue of the National University, Washington, D. C., Session of 1884-'85.

Announcement and Catalogue of the Northwestern Medical College, of St. Joseph, Mo., Session of 1884-'85.

THE
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NEW YORK, SATURDAY, OCTOBER 11, 1884.

THE AMERICAN GYNÆCOLOGICAL SOCIETY.

THE three days' session of the ninth annual meeting of the society, held in Chicago last week, may be said to have been experimental in one respect—namely, that the place of meeting, being situated nearly halfway across the continent from the Atlantic seaboard, was, in the opinion of some of the members, likely to prove the cause of a failure of the meeting to come up to the average in the interest of the proceedings. How completely this gloomy and thoroughly un-American forecast was at fault was realized by those of the members who were able to be present, and doubtless none were more pleasantly disappointed than some of those who had most positively predicted the untoward result we have alluded to. And we think our readers will appreciate the success of the meeting when we state that the three days were so fully taken up with the discussions that, of the eighteen papers set down on the programme, seven had to be read by title only. It is to be regretted, of course, that that very fact precluded any discussion of the interesting subjects with which those seven papers dealt; but the papers themselves will appear in the forthcoming volume of the "Transactions," and will then be up for discussion before a larger body—that of the profession in general.

Nor was the character of the work done one whit behind the standard. It may seem invidious to single out individual papers for special mention, but we can not forbear to allude to a few of those that were presented. Dr. Thomas's paper, for instance, valuable as it was, even considered as a mere contribution to the casuistics of extra-uterine pregnancy, seems noteworthy as conveying by all odds the most precise and rational exposition that has yet come to our knowledge of the respective scopes of electrical treatment and of laparotomy in the management of that appalling accident. Of Dr. Mundé's paper on vaginal hysterectomy, too, it must be said that it presented the merits of that operation so engagingly as to call forth from one of its moderate opponents the remark that its author was a most persuasive advocate; and certainly, considering that it was obviously a reply to Dr. Jackson's paper, read at the preceding annual meeting, the discussion it called forth was notably calm and judicial, while the opposing views expressed ought to save the society from being understood, as it seems to have been understood last year, to have given a quasi-authoritative indorsement to either the one or the other side of the question. Scarcely less remarkable were the same author's paper on the removal of fibrous growths during gestation and Dr. Palmer's admirable presentation of the subject of exploratory laparotomy, each of which brought out a satisfactory discussion, as will be seen by our report of the proceedings.

It is a matter for congratulation that the atmosphere of the meeting was not so overwhelmingly gynæcological, using the word in its restricted sense, as has often been the case. On most occasions heretofore this society and its congeners have appeared to be swayed by an overpowering temptation to bend all their energies to the consideration of the surgical diseases peculiar to women, to the exclusion of the parturient act, which, like the poor, we have always with us. That this was due to a temporary tendency—perhaps an infatuation—has for some time past been realized by those who practiced both branches of what ought really to be understood by the term gynæcology, and it is gratifying to observe that the turning-point seems to have been reached.

At no time during the year have we looked forward to the Chicago meeting with the slightest idea that it was likely to rank at all lower than those that had been held before. We had anticipated, indeed, that the attendance of members from the East would be relatively small, and so, to our shame be it said, it turned out—only three being present from New York, two from Boston, two from Baltimore, and one from Philadelphia. That it should be held to be a greater sacrifice, especially in these days of international congresses, for our eastern men to go to Chicago than for our western friends to make the pilgrimage year after year to our part of the country—in other words, that men should act as if it were farther from New York to Chicago than from Chicago to New York—is past our comprehension. Apart from the interest attaching to the meeting, it was well worth the journey in this instance, if only to look upon the wonderful city that Dr. Thomas, with his customary felicity of expression, characterized in his after-dinner speech as "the Empress of the West." But little, if at all, and that only for a time, does Chicago's professional importance lag behind her commercial supremacy, as our readers must have inferred from the reports we have published from time to time of the proceedings of the Chicago Medical Society.

It must be confessed that the attendance at the meeting, either of members or of spectators, was not large, but among those who were present by invitation there were several who, when we consider the degree to which they are immersed in the absorbing duties of practice, and the fact that a number of them came from great distances, gave the plainest testimony to the attractiveness of the occasion. That their number was not larger is to be explained, we are inclined to think, by the fact that the meeting took place later than usual, at a time when imperative college and hospital engagements had begun, rather than by the remoteness of the place of meeting. It is undoubtedly an important part of what is legitimately expected of special societies that their proceedings should be carried on in full view of the profession at large, and in the case of this particular society that consideration has been so fully recognized as to influence it, thus far, in its decision not to hold its meetings at watering-places; but whenever, as in this instance, a society of specialists finds its members gathered together with comparatively few spectators, the discussions are apt to be somewhat freer than might otherwise be the case. This was observable,

we think, in the case of the Chicago meeting, and it must be accounted a compensation for the thin attendance.

NEWS ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending October 7, 1884:

DISEASES.	Week ending Sept. 30.		Week ending Oct. 7.	
	Cases.	Deaths.	Cases.	Deaths.
Typhus	2	0	1	1
Typhoid Fever.....	57	12	48	12
Scarlet Fever.....	25	2	36	3
Cerebro-spinal meningitis. . .	3	2	2	3
Measles	17	4	19	5
Diphtheria.....	28	12	40	19

Death of Dr. David F. Fetter.—On Thursday, the 2d inst., Dr. Fetter died at his residence, in West Thirty-fourth Street. He took his medical degree in Philadelphia in 1853, and afterward was graduated from the College of Physicians and Surgeons, of this city. He was a member of the Medical Society of the County of New York.

Diphtheria, according to a press dispatch, is unusually prevalent in various parts of Canada at the present time.

Contagious Pleuro-pneumonia on Long Island.—A number of cases of this disease are reported to have been found during the past week at Long Island City and Blissville by Dr. Rowland and Dr. Hawk, who are investigating the condition of the cows in that locality, under instructions from the Department of Agriculture. It is said that the milk furnished by some of the cows that have been found to be diseased was still being sent to the New York market.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from September 23, 1884, to October 4, 1884:*

BENTLEY, EDWIN, Major and Surgeon. Granted two months' leave of absence, with permission to apply for two months' extension, to take effect upon assignment to duty in Department of Texas of Surgeon F. L. Town. S. O. 121, Headquarters Division of the Missouri, September 30, 1884.

BARTHOLOMEW, JOHN H., Captain and Assistant Surgeon. Assigned to duty at Fort Ringgold, Texas, as Post Surgeon. Par. 5, S. O. 129, Headquarters Department of Texas, September 25, 1884.

CRAMPTON, L. W., Captain and Assistant Surgeon. Granted leave of absence for one month and ten days. S. O. 60, Headquarters Division of the Atlantic, October 2, 1884.

GIBSON, R. J., First Lieutenant and Assistant Surgeon. Assigned to duty as Post Surgeon, Fort Winfield Scott, California, relieving Assistant Surgeon A. S. Polhemus.

POLHEMUS, A. S., First Lieutenant and Assistant Surgeon. Upon being relieved, to report to commanding officer, Fort McDermitt, Nevada, for duty as Post Surgeon.

WHITE, R. H., Captain and Assistant Surgeon. To report to commanding officer, Angel Island, California, as Post Surgeon, relieving Assistant Surgeon C. K. Winne.

WINNE, C. K., Captain and Assistant Surgeon. Upon being relieved, to report to commanding officer, Benicia Barracks, California, for duty as Post Surgeon, relieving Surgeon C. O. Byrne. Par. 1, S. O. 115, Headquarters Department of California, September 23, 1884.

EVERETT, EDWARD, First Lieutenant and Assistant Surgeon. Granted leave of absence for one month, with permission to leave the limits of the department. S. O. 145, Headquarters Department of the Columbia, September 24, 1884.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending October 4, 1884:*

STEWART, HENRY, Surgeon. Granted leave of absence for one year, with permission to leave the United States, October 15, 1884.

EDGAR, JOHN M., Passed Assistant Surgeon. Detached from the Nantucket and placed on waiting orders, September 29, 1884.

HARMON, G. E. H., Passed Assistant Surgeon. Ordered to the Naval Academy, September 30, 1884.

BERTOLETTE, D. N., Passed Assistant Surgeon. Ordered from the Naval Academy to the Dolphin, October 4, 1884.

ROGERS, BENJAMIN F., Passed Assistant Surgeon. Ordered to the Naval Academy, September 30, 1884.

COOKE, GEORGE H., Surgeon. Relieved from the Naval Academy and placed on waiting orders, October 2, 1884.

WHITING, ROBERT, Passed Assistant Surgeon. Relieved from the Naval Academy and placed on waiting orders, October 4, 1884.

Marine-Hospital Service.—*Official List of Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service—July 1, 1884, to September 30, 1884.*

BAILHACHE, P. H., Surgeon. To proceed to Delaware Breakwater Quarantine Station as inspector, September 10, 1884. To investigate reported pollution of Potomac River water supply, September 20, 1884.

MILLER, T. W., Surgeon. Granted leave of absence for fourteen days, July 10, 1884. Detailed as president Board of Examiners, September 2, 1884.

WYMAN, WALTER, Surgeon. Detailed as member Board of Examiners, September 2, 1884.

LONG, W. H., Surgeon. Granted leave of absence for twenty days, July 30, 1884.

PURVIANCE, GEORGE, Surgeon. Detailed as recorder Board of Examiners, September 2, 1884.

STONER, G. W., Passed Assistant Surgeon. To proceed to Lewes, Del. (Delaware Breakwater), as inspector, July 25, 1884. To act as quarantine officer at Delaware Breakwater, July 31, 1884.

FISHER, J. C., Passed Assistant Surgeon. Granted leave of absence for thirty days, August 21, 1884.

GOLDSBOROUGH, C. B., Passed Assistant Surgeon. Granted leave of absence for thirty days, July 12, 1884. Leave of absence extended thirty days on surgeon's certificate of disability, August 11, 1884. Leave of absence extended thirty days without pay, September 11, 1884.

HEATH, W. H., Passed Assistant Surgeon. Granted leave of absence for thirty days, September 8, 1884.

GUITERAS, JOHN, Passed Assistant Surgeon. Granted leave of absence for thirty days, September 24, 1884.

BANKS, C. E., Passed Assistant Surgeon. Granted leave of absence for thirty days, August 27, 1884.

BENNETT, P. H., Assistant Surgeon. To proceed to Buffalo, N. Y., for temporary duty, September 19, 1884.

GLENNAN, A. H., Assistant Surgeon. To proceed to Mobile, Ala., for temporary duty, July 7, 1884.

Resignation.

FISHER, J. C., Passed Assistant Surgeon. Resignation accepted by the Secretary of the Treasury, to take effect September 30, 1884. August 21, 1884.

Society Meetings for the Coming Week:

- MONDAY, October 13th:** New York Ophthalmological Society (private); New York Medico-Historical Society (private).
- TUESDAY, October 14th:** American Public Health Association (St. Louis—first day); New York Medical Union (private); Harlem Medical Association of the City of New York; New York Surgical Society; Bergen County, N. J., Medical Society (Hackensack); Cumberland County, N. J., Medical Society (semi-annual); Newark, N. J., Medical Association (private); Trenton, N. J., Medical Association (private); Litchfield County, Conn., Medical Society (annual).
- WEDNESDAY, October 15th:** American Public Health Association (second day); Northwestern Medical and Surgical Society of New York (private); New Jersey Academy of Medicine (Newark).
- THURSDAY, October 16th:** American Public Health Association (third day); New York Academy of Medicine (The Therapeutical Effects of the Internal Administration of Hot Water in the Treatment of Nervous Diseases, by Ambrose L. Ranney, M. D.).
- FRIDAY, October 17th:** American Public Health Association (fourth day).

Letters to the Editor.

PLASTER-OF-PARIS JACKETS FOR SPINAL DEFORMITIES.

DEXTER, IOWA, September 10, 1884.

To the Editor of the New York Medical Journal:

SIR: If others of your readers have had a similar experience to my own in the matter of applying plaster-of-Paris jackets for spinal deformities, they will be glad to receive light on the means of persuading the plaster to "set." Having lately had occasion to attempt a job of this kind, I failed utterly in the first two trials, as the plaster obstinately refused to "set," although I had a fresh article of the best dental plaster-of-Paris. Then I went to experimenting, and, after trying a number of different chemicals dissolved in the water in which I soaked my bandages, I found that chlorate of potassium thus used (about two ounces to one gallon and a half of water) answered the purpose nicely, the only trouble being that it is necessary to work very rapidly, or the plaster hardens too quickly.

M. G. SLOAN.

Proceedings of Societies.

PATHOLOGICAL SOCIETY OF PHILADELPHIA.*Meeting of September 25, 1884.*

The President, Dr. JAMES TYSON, in the chair.

A Phantom Brain was shown by Dr. GUY HINSDALE. It was of colossal size, and was intended to exhibit the course of the fibers and their relation to the several nuclei and to the spinal cord. The preparation had been recently purchased for the Mutter Museum of the College of Physicians, and was constructed by Buechi, of Berne, Switzerland, under the supervision of Professor Aebly. The height was 125 cm. and the width 70 cm. The cortex was dotted over with numerous corks, 2 cm. long, which were distributed in systematic order. The basal nuclei, of a much larger size, were seen in their appro-

priate places. The spinal cord, made up of ganglia and columns of wires of different colors, was represented throughout a portion of the cervical region. These columns of the cord, of different colors to distinguish their function, led to their appropriate ganglia, of corresponding color, or to the areas in the cortex which were marked by similarly colored corks. Taking, first, the anterior and lateral columns of the cord, painted red, the motor fibers could be traced to the anterior and lower portion of the medulla, where they decussated, through the pons, to the internal capsule, where, between the caudate nucleus of the corpus striatum and the optic thalamus, they radiated to the cortex. They were seen to come chiefly from the convolutions about the fissure of Rolando. From a point where red balls were seen a red motor fiber descended to the anterior or lateral columns. It would be seen that the column of Türeck, or the direct pyramidal tract, was in relation with the posterior part of the lateral column of the opposite side. As regarded the exact localization of the sensory and motor tracts of the spinal cord, there was still some discrepancy of opinion. Professor Ferrier stated that the antero-lateral columns were usually regarded as the chief motor paths, but quoted the recent and careful experiments of Ludwig and Woroschiloff (1874), who placed the motor paths in the lateral columns only. The anterior columns (of Türeck) were regarded more as commissural connections between the motor nerves and adjacent segments, and not at least as the direct paths of motor impulses proceeding from the brain. Tracing the fibers of the posterior columns, colored blue, they were represented as wholly decussating in the medulla forming the posterior third of the internal capsule and passing to the corpora quadrigemina and optic thalami, also colored blue, which were the great centers of sensation. The external portion of the lateral columns, colored green, were seen to lead to the cerebellum, decussating near its superior surface. The yellow fibers of the model placed the basal nuclei in communication with the cortex; the white fibers constituting the corpus callosum were purely commissural. The columns of the cord, as represented in the model, corresponded precisely with the arrangement given by Flechsig and endorsed by Charcot and Hammond. Ludwig and Woroschiloff* argued that a vicarious interchange of function potentially existed between different parts of the cord.

A Case of Infantile Mollities Ossium was presented by Dr. CHARLES MEGGS WILSON, for Mr. CLINTON DENT, of St. George's Hospital, London. The following history had been furnished by Mr. Dent: "This specimen shows the inner vertical half of the right femur of a child aged sixteen months. There is a pseudo-fracture of the bone. The medullary canal is filled up, and a considerable deposit of enveloping callus maintains the fragments in apposition. The entire bone is unnaturally soft, and in the recent state showed this peculiarity still more strongly. The bone was removed post mortem from the body of a feeble, ill-nourished child. No history of syphilis could be got from the parents, and the child showed no evidence of congenital syphilis. Some of the ordinary symptoms of rickets were observable, e. g., bending of the ribs, general tenderness, enlargement of the wrists, etc. No symptoms of scurvy were present. It was evident that there was much more than rickets in the condition. When the child was first admitted to the hospital there were pseudo-fractures of the right humerus and left tibia, besides the fracture of the right femur. The humerus, which was bent at a right angle, was forcibly straightened. It bent like a bar of soft metal, and remained in its new position. It was, however, put in a light pasteboard splint. Subsequently, with the removal of the splint, the bone again gradually bent and was again forcibly

* Ferrier, "Functions of the Brain," London, 1876, p. 5.

straightened. While in the hospital, under observation, the femora became affected in the usual place—i. e., a little below the trochanters. Some swelling and tenderness were noticed, and then, although the child was kept constantly in bed, the bones became bent; ultimately, in about ten days, the pseudo-fractures became complete. Great improvement of the general health, as evidenced by rapid increase of weight, resulted from the treatment by rest, good diet, and cod-liver oil. The child finally died from an attack of whooping-cough, after having been under observation a few weeks.¹¹

This was a very rare form of bone disease, Dr. Wilson remarked, especially in the young. It was seen occasionally in England—never with us. The pathological changes seemed to be of a retrograde character. Sometimes lipomatosis took place; sometimes there was a metamorphosis, first into cartilage and then into embryonic tissue. This specimen showed, in different portions, both changes. The disease was attended with marked fatality. In this specimen the cortical substance was attenuated, and the medullary cavity was enormously enlarged. The bone seemed deficient in lime-salts. Some authorities believed that the lactic acid found in the chemical analysis of such bones was accountable for this. This fact was mentioned in order to elicit discussion. Other observers had found enormous quantities of oxalate of lime in the urine of patients with malacostron bones. One curious fact was the effort which nature made to repair the fractures, as shown in this specimen. This callus seemed deficient in inorganic matter, and eventually became reabsorbed. Syphilis, scrofula, and scorbutus had all been assigned as causes of the affection. Most authorities denied the existence of the disease in children, assigned it to middle life, and spoke of it as being lighted up or aggravated in women by pregnancy.

AMERICAN GYNÆCOLOGICAL SOCIETY.

Ninth Annual Meeting, held in Chicago, Tuesday, Wednesday, and Thursday, September 30, and October 1 and 2, 1884.

Tuesday's Proceedings.

THE meeting was called to order by the President, Dr. ALBERT H. SMITH, of Philadelphia.

THE Address of Welcome was read by Dr. WILLIAM H. BTFORD, of Chicago. Many of the members of the society, he said, now found themselves in Chicago for the first time; others had been there many times in the past. As to the former, the fame of their good works had come before them; the latter were known in person as well as in renown. He and his colleagues of the Committee of Arrangements desired to give all present such a welcome as would make them feel entirely at home. He expressed the hope that the desire to see the city—a place that but a few years ago was a village on the outskirts of civilization, but now exerted a vast influence in the commerce of the world—would detain many of the members beyond the time occupied by the meeting. He then alluded to the loss that the profession of medicine, and gynecologists in particular, had sustained in the death of that leader, the late Dr. Marion Sims.

Moot Points in regard to Inversion of the Uterus was the title of the first paper, read by Dr. JOHN C. REEVE, of Dayton, Ohio. It dealt with the causes and the mechanism of the lesion, and the medico-legal importance that sometimes attached to them. In the vast majority of instances, as was conceded by all writers, inversion of the uterus took place only as an accident of delivery or as the result of the sudden expulsion of a polypus, but very high authorities had admitted that hydrometra and hæmatometra might lead to its occurrence, although the sup-

position had not been proved by actual cases. In regard to such a subject, however—a rare accident, happening oftener in cases attended by midwives and other ignorant persons than under competent observation, and calculated, by the suddenness of its occurrence and by its appalling nature, to interfere with cool judgment—it was allowable to reason in relation to certain points in the absence of precise data. The first question he would discuss was, therefore, *Could inversion of the uterus occur wholly independently of pregnancy or of a polypus?* It was evident that hydatids furnished the conditions admitted to be requisite, namely, distension and sudden emptying of the organ; but he would exclude that affection also from his question. With a healthy uterus, probably there could be no inversion independently of the conditions mentioned; but it had first been affirmed by Puzos that certain pathological changes in the organ might favor its occurrence. Mme. Boivin had coincided in this opinion, and Tyler Smith had maintained that inversion had actually happened from such a cause, the particular occasion being spasmodic action of the uterus coming on in the course of long-continued menorrhagia. On the other hand, Duncan and West had denied the possibility of such a thing, the former arguing that the uterine wall was so thick and firm that it could not be indented. This argument, however, ignored pathological conditions of the organ, and therefore was irrelevant. Duncan himself had shown that an enlarged and softened state of the uterus was not rare in connection with disease. Such changes need not be very marked to produce the result, as was shown by the occurrence of inversion after abortion, of which there were many cases on record. The condition termed by Rigby the "squatty uterus" seemed to have been observed by Mme. Boivin, and, in our own times, had been well described by Dr. Isaac E. Taylor, of New York. But, to come to facts, there were three cases which seemed to settle the matter; one related by Baudelocque, one by Boyer, and one by Dr. T. Gailard Thomas, of New York. The latter case was that of a young woman who had had one child, seven or eight years before, but had not been known to have any uterine disease. She made a violent effort in a game of ten-pins, and suddenly felt something give way within her, accompanied by intense pain. The family physician made a vaginal examination and found a protrusion into the vagina, which he took to be a polypus that had suddenly been expelled from the uterus. The late Dr. Willard Parker, who was called in consultation, coincided in this diagnosis, and removed the supposed polypus, but found at once that he had removed the uterus, which had suddenly been inverted. The patient recovered.

The next question was, *Did inversion of the uterus always begin at the fundus, or did it not sometimes begin at the cervix?* Most writers had denied the possibility of inversion originating by a rolling out at the cervix, while some, like Dr. Thomas, had merely stated that its occurrence was not proved. Tyler Smith had been credited with having upheld the doctrine, but he (Dr. Reeve) had not been able to find that author's enunciation of it. There was strong analogical evidence in its favor, the process being held to be like that by which a prolapse of the rectum or an intussusception was produced. The organ must have become soft and flabby to admit of it, however. In proof of the possibility, reference was made to an essay by Dr. Isaac E. Taylor, who had given three cases, one of which had come under his own observation. On the whole, the evidence seemed to be strong enough to warrant the affirmation that inversion might begin at the cervix.

The next question was, *Did puerperal inversion of the uterus ever occur except at or immediately after delivery?* Upon this question turned that of the responsibility of the accoucheur, who could not be held blameless if he overlooked an accident usually

so marked in its symptoms, provided it were established that it always took place at a time when he was or should have been present. The question, therefore, was one of medico-legal importance, and in that connection reference was made to a case that happened in Chicago a number of years ago, in which a physician took legal proceedings against the patient's husband, who had repeatedly charged him with incompetence in the management of the case, and had coupled abuse with his criticism. The suit went against the physician, but, turning as it did upon the question now under consideration, it was doubtful if the decision was a just one. When there was nothing at the time of labor, or during the usual period of attendance, to show that anything was wrong, but symptoms of inversion came on suddenly afterward, could it be held, nevertheless, that the accident had really occurred at the time of the confinement? Such instances were not rare, and in one case a year had elapsed between the labor and the recognition of the inversion, although there had been profuse and repeated hemorrhages in the interval. Under such circumstances, it was incumbent upon the practitioner to endeavor to detect the presence of inversion. Several cases were cited to show the possibility of puerperal inversion coming on after the lapse of a considerable length of time, and the frequency with which secondary hemorrhage and relaxation of the uterus were observed was spoken of as supporting the idea.

The fourth question was, *Could inversion take place without symptoms sufficient to attract attention or to indicate that anything had gone wrong?* Striking as the symptoms usually were, several cases were cited to sustain an affirmative answer to this question, and it was therefore concluded that it must be so answered.

Dr. JOHN SCOTT, of San Francisco, had met with two instances that seemed to have a bearing on the questions raised in the paper. In one of them the patient was attended in her confinement by a homeopathic physician, who, according to her account, seemed to be in some haste to remove the placenta. The history indicated that the inversion took place at the time the placenta was extracted, but for a number of weeks leucorrhœa and pain in the back were the only symptoms, the primary recurrent hemorrhages having subsided. At the time of her weaning the child, however, eight months after its birth, the hemorrhage recurred. When Dr. Scott reduced the inversion, an operation that took some twenty minutes, he felt that some of the circular fibers of the uterus gave way, and he found that the organ remained flaccid. At the next menstrual period there was a return of the hemorrhage, and another at the second period. On the latter occasion, having found the bleeding difficult to control, he introduced two silver sutures and drew the womb together. This stopped the hemorrhage, but it was followed by a sharp attack of cellulitis.

Dr. WILLIAM H. BYFORD, of Chicago, had seen nine or ten cases of inversion of the uterus, and one of them had occurred in his own practice. A healthy young woman gave birth to her second child, and there was nothing unusual about the labor. He did not examine by the vagina, but he was perfectly satisfied, from thorough abdominal palpation, that the uterus was of proper size and shape. There was no hemorrhage, and everything appeared right. Some weeks afterward moderate hemorrhage occurred, at the time of weaning the child, and, as Dr. Byford happened to be out of town, another practitioner was called in, and detected an inversion, which was the occasion of great astonishment to Dr. Byford.

Dr. B. BERNARD BROWNE, of Baltimore, related a case in which the symptoms did not come on until the sixth week, when pain and syncope suddenly occurred. In that case it was probable that the inversion began toward the cervix. The attend-

ance had been competent. He alluded to the difficulty sometimes encountered in producing temporary inversion to facilitate the removal of tumors.

Dr. ALEXANDER DUNLAP, of Springfield, O., related a case in which hemorrhage continued after labor, but the os uteri was found closed, and the inversion was not detected until some months later, although examinations were made from time to time. In this case the inversion was probably partial for a time, and began at the fundus.

Dr. EDWARD W. SAWYER, of Chicago, alluded to unusual distension of the uterus as a cause of inversion, and related the history of a case of hydramnios in which, after the removal of the placenta, the proper shape of the uterus was maintained, but the fundus remained at a higher level than natural. The flow of liquor amni had been so enormous that he thought it necessary to have the bedclothing changed at once, and undertook to attend to it himself, having called upon the husband to hold the uterus. While this was going on, occupying perhaps ten minutes, profuse hemorrhage began, and it was found that the fundus could not be felt. Ergot was given at once, on account of the hemorrhage. The fundus was now felt bulging through the os uteri, and all his efforts to replace it failed, owing to the tonic contraction that had been set up by the ergot. The patient went into a state of collapse, and died in three hours. The site of the placental implantation, in the right horn of the uterus, was found to be four times as thick as the rest of the organ, so that it seemed as if the fundus might have fallen in by the mere force of gravitation.

Dr. HENRY P. C. WILSON, of Baltimore, remarked, in regard to the question of the lapse of time between labor and the occurrence of inversion, that it was rather the state of the uterus than the time in itself that would favor the accident, especially anything that retarded involution, such as hemorrhage, mental strain, or over-exertion.

Dr. WILLIAM T. HOWARD, of Baltimore, related several cases of inversion that had come under his observation.

Foreign Bodies in the Abdomen after Laparotomy.—Dr. HENRY P. C. WILSON, of Baltimore, read a paper with this title. He had been led to think that foreign bodies, such as sponges and small instruments, left in the abdominal cavity after laparotomy, were much more frequently the cause of death than was generally supposed. Undoubtedly there were many cases that were never published, partly because of their damaging character, and partly because, as post-mortems were not always made, the presence of the foreign body was sometimes never discovered. On this account he had not been able to collect a large array of cases; still he had received accounts of quite a number, including several that had been reported to him verbally since he left home to attend the meeting. After giving the leading facts in these cases, he read a detailed history of a remarkable case that had happened in his own practice. In that case the foreign body was a portion of sponge, and its presence in the abdomen was not suspected until months after the operation. Ovariectomy was performed on a patient who was five months advanced in gestation, and miscarriage took place on the eighteenth day. After more than five months, during a great portion of which time the patient continued to suffer from symptoms referable to the formation of abscesses, a bit of sponge was found presenting one day when an abscess was opened. Its removal with a forceps was followed by free hemorrhage, so that, although it was evident that more sponge was still in the abdomen, it was judged best to effect its removal gradually, and that process occupied a number of weeks, several pieces being removed, amounting altogether to a mass nearly as large as a hen's egg. The patient then went on rapidly to complete recovery. In that case the sponges had been counted, not by a

nurse, but by his own son, at the time of the operation, and he could not account for the mistake except by the supposition that a piece had become detached from a large sponge during the process of sponging. For the prevention of such accidents, he would make the following suggestions: The operator should do his own sponging; sponges and instruments should be employed in no greater number than was absolutely necessary, and they should not be too small; it should be made the specified duty of one of the assistants to see that no foreign bodies were left in the abdomen; the assistants should be as few as possible, one being better than three, and none better than five.

Dr. T. GAILLARD THOMAS, of New York, thought that such a paper was one that had been decidedly called for for a long time. In over four hundred cases of laparotomy, the accident had occurred to him only once. In that case he had not taken even a single sponge into his own hand, and had had only one assistant, Dr. James B. Hunter, whose skill and carefulness were well known; and there had been only one sponge used at all. At the post-mortem examination, a small piece of sponge was found in the abdominal cavity, and evidently it had become detached during the process of sponging. There were many cases, he thought, in which the operator could not do all the sponging himself, as his hands were fully occupied in other matters, and he was forced to assign a portion of it to an assistant. It was useless to depend on a nurse to count the sponges; if too few were found at the close of the operation, there was a great temptation to her to infer and to assert that the full complement had not been present at the start. As a matter of precaution, it was now his practice to attach a tape, five or six inches in length, to each sponge, and this was to be kept hanging out from the wound whenever the sponge was introduced. The length of time for which hæmostatic forceps were kept applied to vessels should be shortened, and they should not be suffered to disappear from view even for an instant. Incidentally, Dr. Thomas stated that it had come to be the practice at the Woman's Hospital to use chloroform instead of ether in case the patient was suffering from renal disease, for it had been observed there (first by Dr. Emmet, he thought) that patients so affected were liable to suffer from suppression of urine after the use of ether.

Dr. A. REEVES JACKSON, of Chicago, knew of three instances in which foreign bodies had been found in the abdomen after laparotomy performed in that city, but none of them had happened in his own practice. It was his habit to have a written list made of all the sponges and instruments in the room at the time of the operation, and, on its completion, he checked them off from the list himself. It was a standing order, too, that sponges were never to be torn.

Dr. DUNLAP had been surprised at the facts stated in the paper and at the minute precautions which had been thought necessary. For his own part, he allowed no one to hand him the instruments, or to do the sponging; he attended to those matters himself. He used very few sponges, and those were very large. Consequently, he had never had any fear that he had left any foreign body in the abdomen.

Dr. HOWARD spoke of the admirable method employed in the Samaritan Hospital in London: fifteen sponges were provided, and these were checked off by two nurses when an operation had been completed. He alluded to two cases that had occurred there before this system was adopted. In one of them the abdomen was opened and the sponge removed, and the patient recovered; in the other, the sponge could not be found when the wound was opened, and death resulted.

Dr. GEORGE J. ENGELMANN, of St. Louis, could add one to the list of cases contained in the paper, and it was one of which he had declined to write when Dr. Wilson had asked him for an account of any cases he might know of. It had occurred in

his own practice, but he did not feel that he was responsible for the occurrence, for it was due to the meddling of a distinguished gynecologist from the East, who had been invited to be present, and who became so interested in the operation that he persisted in sponging, although remonstrated with more than once. The patient did well for two days, and then passed into a state of depression, with melancholia, and died. At the post-mortem a sponge was found high in the abdomen, beneath the omentum. There was no inflammation about it, only a little injection.

Dr. PAUL F. MUNDÉ, of New York, thought it important that the sponges should be in such condition that they would not readily tear in their use, and that when they were to be made smaller they should be cut rather than torn. In removing the large flat sponges with forceps, there was danger of detaching pieces if the sponges were not of good quality.

Dr. WILLIAM H. BAKER, of Boston, thought that not only those appliances that were simply used at the time, but also those substances that were to remain, such as sutures and ligatures, should be selected with great care.

Dr. WILSON was much pleased with the device mentioned by Dr. Thomas, and was inclined to make use of it in the future. Where a large incision had been made it was practicable to use only large sponges, but he could not admit that small sponges were to be avoided altogether.

Abdominal Section; its Value and Range of Application, was the title of a paper read by Dr. C. D. PALMER, of Cincinnati. Although the difficulties met with in the diagnosis of pelvic and abdominal tumors were no greater than pertained to those of the other great divisions of the body, we had in exploratory abdominal section a means of meeting them that could not be applied elsewhere. While, with proper precautions, it was scarcely more dangerous than tapping, it was incomparably superior in enabling us to ascertain the real state of the parts. Observers were not agreed as to the precise risk attending the operation of tapping, and he would not say that it never ought to be done, but he was convinced that it was highly dangerous in many instances, and that it should generally be avoided. The plan of tapping parovarian cysts and ovarian monoecysts once before proceeding to their removal was not very likely to prove curative, and positive reliance could not be put on the examination of the fluid withdrawn. The danger of an exploratory laparotomy, he thought, depended on the length of the incision and on the amount of handling to which the contents of the abdomen were subjected. Nevertheless, a small incision might prove fatal. Much depended on the patient's constitutional condition; if she had cancer, the operation was highly dangerous. Of five cases of cancerous disease in which he had done it to ascertain the presence of cancer, four had proved fatal in from three to thirty days; the other patient was still living, after the lapse of sixteen months. Where the vitality was not depreciated, the operation was practically free from danger in the cases that seemed reasonably to require it, although the danger of an incomplete ovariectomy was greater than that of a completed ovariectomy. In a certain sense, every laparotomy was exploratory, for we could never be positive at the outset as to what state of things we should find. Except under the stress of necessity, however, the operation should not be done by the inexperienced, for it was far more dangerous in their hands than in those of men who were frequently called upon to perform it. When it was decided upon, it should be done early, as there was danger in postponement. The incision should be made small at first, and could be enlarged if necessary. As to the cases in which the procedure was likely to be called for, they included some ovarian tumors with complications; certain interstitial and subperitoneal fibrous

tumors of the uterus, chiefly to settle the question between oophorectomy and hysterectomy; certain cases of acute or chronic peritonitis in which septicæmia was threatened; cases of intestinal obstruction; some cases of chronic pelvic abscess; extra-uterine pregnancy after the fourth month (early in the interstitial and tubal varieties—immediately in the abdominal form, without waiting for threatening symptoms). No doubt the operation was liable to abuse, but to a great extent it ought to supersede tapping.

Dr. ENGELMANN thought it was done too little in this country. It should not be too strictly a means of diagnosis, but often might prove the first step in a curative operation. He referred to three cases in which he had felt obliged to close the incision in consequence of the unfavorable conditions found. It was less dangerous than tapping, and far more satisfactory.

Dr. DUNLAP had had no experience with it; wherever he had been in doubt, it had been in cases where the patients' condition was such that an incision would have been unwarrantable.

Dr. MUNDE thought it was too much the habit to make a large incision at first in doubtful cases, so that the operator felt obliged to go on. Exploratory incision was rather a safe procedure, perhaps safer than tapping. In cases of pelvic abscess he would hardly call the incision exploratory.

Dr. WILSON referred to a case of hydramnios in which the procedure had saved him from puncturing the uterus by tapping. The diagnosis had been uncertain, but, when it was once made out, he did not hesitate to bring on labor, and the patient, although she had been at the point of death, did well.

Dr. R. B. MAURY, of Memphis, had resorted to the measure twice. In one of the cases there was supposed to be a multilocular ovarian cyst, and it was a question whether there was not a coil of intestine adherent to its anterior surface. This was found to be the case, and it was found also that the adhesion did not admit of being broken up, and, moreover, that the cyst was situated within the mesentery. The incision was closed, and the patient lived fifteen months. In the other case, one of uterine myoma, the question was with reference to the feasibility of removing the ovaries. This was found to be impracticable, the incision was closed, and the patient recovered.

Dr. A. REEVES JACKSON, of Chicago, inquired what the risk was when the operation was done for abscess.

Dr. DUNLAP had had one case of the sort referred to by Dr. JACKSON, in a male patient, in which he suspected abscess, although several other diagnoses had been made. He made an incision, not strictly exploratory, and was successful in restoring a chronic invalid to health.

Dr. SCOTT referred to a case that he had had, in the Woman's Hospital of the State of California, in which there was extensive suppuration in the broad ligament after labor, with an opening into the intestinal canal. He called a consultation of the staff, and proposed to perform an exploratory laparotomy, but his judgment was not concurred in at the time, and the operation was postponed until a later period, when the consent of his associates was given, the patient having in the mean time become septicæmic. There was decided improvement within four days, the opening into the intestine closed, and the patient recovered. In another case of obscure abscess, which had been opened through the vagina, but without relief, on abdominal incision the Fallopian tube was found to be the primary seat of suppuration. This was incised, but it was found impracticable to stitch the edges of the incision to the lips of the abdominal wound, drainage could not be carried out satisfactorily, and the patient died.

Dr. PALMER emphasized the exception he had referred to, that of malignant disease, in which cases the patients would

generally die in from three to ten days after the operation. He then referred to several cases in which tapping would manifestly have been of no avail to establish a diagnosis, but in which an incision only large enough to admit the left little finger gave all the information that was needed. In cases of pelvic abscess with long, tortuous tracts, where there were difficulties attending an opening from below, or where no fluctuation could be detected, an exploratory laparotomy was the one thing to be done.

Dr. ENGELMANN referred to cases of malignant disease in which it had proved harmless.

Dr. PALMER rejoined that, so far as that matter was concerned, his statements had been founded simply on his own experience.

Cervical Fibroids as a Cause of Dystocia, and their Removal by Vaginal Enucleation, was the title of the next paper, read at the afternoon session, by Dr. PAUL F. MUNDE, of New York. The author showed a tumor, weighing upward of three pounds, which he had removed from the cervix by enucleation. The circumstances of the case were these: The presence of the growth was ascertained a number of weeks before the time at which the patient expected to be delivered, but it was decided to postpone interference until the time of labor, mainly on the strength of a case in which Schröder had dealt with a large fibrous tumor successfully at term, although the tumor was not so large as in the case now referred to. Labor came on prematurely, however, and Dr. Munde found himself compelled to choose between the removal of the tumor and the performance of the Cæsarean operation. He decided upon enucleation, and found it comparatively easy of performance. He would not have felt like undertaking it without the spoon-saw, but it turned out that he had to use that instrument but very little. The author then gave a *résumé* of the literature of the subject, by which it appeared that enucleation gave better results than the Cæsarean operation. It was the common opinion that only small tumors could be treated successfully in this way, and a distinct statement to that effect had lately been made by Playfair, at a meeting of the Obstetrical Society of London, but it had been controverted by Braxton Hicks, and the case related in the paper went to confirm the opinion expressed by the latter gentleman.

The discussion on Dr. Munde's paper was postponed until the next day.

Wednesday's Proceedings.

The President being unable to preside, owing to illness, Dr. BYFORD occupied the chair.

The discussion on Dr. Munde's paper being in order, Dr. EDWARD W. JENES, of Detroit, related a case that had happened in his practice, in which a small fibroid was removed without difficulty, partly by enucleation and partly by excision, and in which the patient had done well. As a general thing, he would prefer enucleation to the Cæsarean operation in such cases.

Dr. WILSON called attention to the greater ease with which tumors could be so treated when situated in the cervical wall than when they sprang from the body of the organ.

Dr. BYFORD said that in the cases he had met with he had invariably postponed interference until the time of labor. To operate early was to run the risk of bringing on miscarriage; moreover, such tumors, even if interstitial, were often so pushed out before the head at the time of labor that they interfered but very little with the delivery. Sometimes, too, this pushing-out process so crushed the tumor as to facilitate its enucleation.

Dr. DUNLAP could not speak from personal experience in such cases, but he would call attention to the pedunculated state of the tumor in Dr. Munde's case—a condition that would decidedly facilitate its removal as compared with sessile and sub-

peritoneal tumors. However, he would try enucleation in almost any case.

Dr. ELY VAN DE WARKER, of Syracuse, had encountered one case in point, to which he had been called in consultation. The tumor was seated in the posterior cervical wall, and occupied a large part of the pelvic cavity. He proposed enucleation, but was overruled, and the Cæsarean operation was performed. The mother died of shock, and the post-mortem examination showed the practicability of enucleation.

Dr. THADDEUS A. REAMY, of Cincinnati, had seen but one case, in consultation. The tumor, which was situated in the posterior wall, was not detected before labor came on. It then presented at the os uteri, and there was no distinct pedicle. He incised the capsule and enucleated the tumor, and the patient did well. As a rule, he would wait until labor set in—for two reasons, besides those that had been mentioned by Dr. Byford: 1. Enucleation would be easier then, on account of the dilatation of the cervix, whereby the danger of using tents was avoided. 2. He thought that at the time of labor there was less rather than more risk of septiciæmia from such an operation.

Dr. MUNDÉ said that the point he had wished to make was, that enucleation was comparatively easy, even when the growth extended up somewhat into the body of the uterus, but, of course, it was easier at the time of labor. As to the time for the operation, he thought that it would vary with the nature of the individual case. Where a tumor was growing rapidly, he would operate early, and enucleation should always be the first procedure tried. It would be much facilitated by an efficient tracile instrument.

A Mediæval Instrument for preventing Coitus.—Dr. THOMAS showed a relic of the Middle Ages, in the shape of a contrivance for preventing women from indulging in intercourse. It had lately been given him by a friend, by whom it had been found in the bottom of one of a number of trunks that constituted, with the odds and ends which made up their contents, the remnant of an estate in Europe that he had been called upon to take charge of. The apparatus resembled the well-known ivory affair that was furtively exhibited to tourists at the Hôtel de Cluny. It consisted of a jointed iron belt, to encircle the hips, to which a rigid strip of iron was connected before and behind, somewhat after the manner of a T-bandage. This strip of iron was widened where it passed over the vulva, and at that place there was a slit-like fenestra with a serrated edge, the teeth being bent somewhat outward. At the situation of the anus there was another perforated expansion, circular in this instance, and that opening also was serrated. The whole was covered with ancient-looking velvet. The strip of iron which passed between the thighs was hinged to the pelvic girdle in front, but behind (perhaps to add to its discomfort) it was secured with a lock. The original lock was a remarkable antique, and bore the emblems of high nobility—perhaps royalty. On that account his friend had desired to keep possession of it, and therefore he (Dr. Thomas) had replaced it with a small modern padlock.

A Further Report upon Extra-uterine Pregnancy, embodying Six Cases.—Dr. THOMAS then read a paper with this title, the cases being supplementary to those that he had reported at the meeting held in 1882. They went to confirm the views which he had then expressed as to the innocuousness and the efficiency of the electric current as a means of destroying the vitality of the embryo in the early stages of extra-uterine gestation, with the result of converting the product of conception into a comparatively harmless mass. The paper gave minute details of the cases, for it was very important, the author thought, that with regard to an accident so uncertain of diagnosis the reader should be furnished with all possible facts to enable him to draw

his own conclusions as to the real nature of the cases. With all the difficulties that attended the early diagnosis of extra-uterine pregnancy, it was by no means impossible, Depaul to the contrary notwithstanding. He was convinced, moreover, that the accident was of far more frequent occurrence than was commonly supposed, and that in many instances the fœtus died early, and therefore the mothers recovered. This supposition was remarkably strengthened by experiments that had been performed by Leopold, who had found that fœtuses turned into the abdominal cavity in rabbits withered, and that the animals recovered. All this afforded theoretical support to the treatment of extra-uterine gestation, in its early stages, by destroying the life of the fœtus by means of electricity. Generally this was easy of accomplishment, and that, too, with currents not only not liable to injure the mother, but not even of very disagreeable intensity. In one instance, however, he had been obliged to use a galvanic current from forty cells. In advanced cases laparotomy still remained the only resource. In regard to this operation, it was generally best not to remove the placenta at the time, unless the fœtus had been dead for some time, so that the placenta had begun to undergo that decrease in its blood-supply which accompanied and followed the discontinuance of its functional activity. When rupture of the sac had taken place, the operation should be done at once, for the purpose of ligating the bleeding vessels, as was advocated several years ago by the late Dr. Stephen Rogers, of New York, and lately practiced by Mr. Lawson Tait, of England, and Dr. Charles K. Briddon, of New York.

Dr. MUNDÉ had seen four cases of extra-uterine pregnancy, but only one of them early enough for the employment of electricity. In that case, which had been published, the symptoms and the physical signs left no room for doubt as to the diagnosis, and it had been confirmed by Dr. Emmet without his having known the conclusion at which he (Dr. MUNDÉ) had arrived. The galvanic current was employed, and, although severe shock was manifested, the strength was carried up to that of twenty-four cells. This caused considerable pain, and was followed by collapse of such severity that rupture of the sac was suspected. Indeed, Dr. Briddon, to whom he had spoken of the case at the time, was so convinced that it had taken place that he urged him to perform laparotomy. This was not done, however, but morphine was used freely. The patient soon improved, and gradually recovered. Galvanism was not used further, but several applications of faradization were made. The mass gradually diminished in size until it was not more than one third as large as it had been, and the patient went abroad. He thought that in future he would try faradization first. Any other treatment than that by electricity, in the early stages, was a mere waste of time if nothing worse, although laparotomy before the occurrence of rupture, as had been done by Veit, was to be thought of.

Dr. T. B. HARVEY, of Indianapolis (present by invitation), asked if the uterus was enlarged in all cases of extra-uterine pregnancy, as was laid down in the text-books. He had seen a case in which, at the fourteenth month after conception, the uterus was of its natural size.

Dr. THOMAS thought that the explanation of that fact probably was that the uterus had undergone involution.

Dr. PALMER asked Dr. Thomas how late in the progress of a case he would consider the use of electricity proper.

Dr. THOMAS replied that he would not generally place any dependence upon it after four months or, at the latest, five months and a half had been completed, especially if he was satisfied that the fœtus was in the abdominal cavity, but would let the case go on with the view of resorting to laparotomy subsequently.

Dr. WILSON referred to two cases that had come under his observation. In one of them electricity was used, and the other was his well-known case of simultaneous extra-uterine and intra-uterine twin gestation. The question had occurred to him, whether laparotomy should be performed at once on the completion of the normal period of gestation, or whether it was justifiable to suffer the child to die, as the result of delay for the purpose of inducing shrinking of the placenta.

Dr. THOMAS thought that, when the child was living at the completion of the ninth month of pregnancy, it should be removed by abdominal incision at once, but that, if it was dead, delay should be practiced in the interest of the mother.

Dr. HOWARD had seen a case bearing upon the point brought up by Dr. HARVEY. The woman thought that she had been pregnant for sixteen months, and the uterus still measured four inches in depth. At the post-mortem examination the fetus was found decomposed. The case went to show that involution did not always take place at once after the death of the fetus.

Dr. BAKER had seen four cases. He had been struck with the difficulty of the diagnosis in the early stages, even with the aid of anesthetics. In one case, in which the rational symptoms were indicative of rupture of the sac, careful examination with the patient anesthetized did not corroborate the suspicion, and the patient died. At the post-mortem examination it was found that rupture had taken place.

Dr. REAMY coincided with the views that had been expressed in the paper, especially with regard to the limitations of laparotomy.

A Case of Tubal Pregnancy with Rupture of the Sac.—

Dr. Reamy having been called to the chair, Dr. MAURY read a paper with this title. The case occurred in a patient who had undergone the usual operation for laceration of the perineum. The uterus was distinctly enlarged, as felt through the abdominal wall, and there was a mass on the right side, in Douglas's *cul-de-sac*. The patient was suddenly seized with intense abdominal pain and shock—symptoms which were interpreted as indicative of the sac having ruptured and given rise to the formation of a hematocoele. Under treatment directed to the relief of the symptoms, reaction took place, and peritonitis followed, but the patient recovered. Six months afterward, only a small mass was to be felt in the situation that had been occupied by the sac. With all the advances that had been made in abdominal surgery, the author doubted if it would ever be practicable to make primary interference generally satisfactory in such cases, and he therefore advised waiting until the subsidence of the shock occasioned by the rupture.

The Limits of Vaginal Hysterectomy for Cancer.—

Byford being in the chair, Dr. MUNDÉ read a paper with this title. [It will be remembered that, at last year's meeting, held in Philadelphia, Dr. JACKSON read a paper in which he took the decided position that hysterectomy for cancer was an unjustifiable procedure. Dr. MUNDÉ's paper seemed to have been called forth by Dr. JACKSON's, and to have been intended as in some sort a reply to it, for the author said that the way in which Dr. JACKSON's paper had been received had given the impression in some quarters that the society had authoritatively expressed its disapproval of the operation.] Leaving Freund's operation out of account, for that had practically been abandoned, even by its promoter, except in certain very favorable cases, the question turned mainly on the frequency with which the disease returned after extirpation of the uterus by the vagina in cases where the operation could fairly be held to be justifiable, since it had been shown not to be so dangerous in its immediate results as to put it beyond the bounds of legitimate surgery. The statistics of eighty-two operations, by various surgeons, showed the follow-

ing facts bearing upon the question: Schröder had done the operation in thirty-four cases, in twenty-three of which a recurrence of the disease had taken place in from six to eighteen months, while in eleven there had been no recurrence at the end of two years; A. Martin had operated in sixteen cases, with eight recurrences (time not specified); Olshausen, in the same number of cases, had met with nine recurrences in from four months to two years and a half; Demons had had seven cases, with two recurrences in from five to nine months; Czerny had had five cases, and recurrence seemed to have taken place in two of them, after the lapse of from one to two years; Kufferth had had one case, and recurrence took place in five months; the author of the paper had reported one case, in which recurrence had taken place at the end of nine months; Burke had reported one, in which the patient remained free at the end of two years; and in a case reported by Boeckel recurrence was observed in two months. Of the whole number, therefore, there had been a recurrence within two years in forty-eight, while in thirty-two there had been none. This, to be sure, was not a very flattering showing, but it was enough, the author maintained, to entitle the operation to further trials, and it should not be condemned outright.

Dr. REAMY and Dr. JACKSON asked upon what duration of life after the operation it had depended whether the cases were excluded from the table, on the ground that death had been the direct result of the procedure.

Dr. MUNDÉ answered that all those in which death had taken place within a month of the operation had been excluded, although it was reasonable to suppose, as with regard to almost any operation, that some of those deaths had been due to intercurrent affections or some accidental circumstances which were not fairly chargeable to the operation itself.

Dr. JACKSON wished to emphasize his belief that any surgical operation should either alleviate suffering or prolong life; otherwise it was unjustifiable, and could not be justified by particular "runs" of successful cases. The operation in question accomplished neither of these purposes, unless we counted death as a relief from suffering. When the disease returned, the relapse was attended with the same suffering that had accompanied the original outbreak. In his paper, which had been so pointedly referred to, he had shown by calculations based on statistics that life was actually shortened by operations for cancer of the neck of the uterus. Dr. MUNDÉ's figures showed a slight reduction of the mortality since that time, but it was still to be shown whether or not lives had been prolonged. Did not all who were present, including the essayist, know that, on the average, patients did not live eighteen months after the operation? He (Dr. JACKSON) knew, indeed, of one solitary instance in Chicago in which vaginal hysterectomy had been followed by survival for two years and a half now, but such an occurrence was more than exceptional—it was phenomenal. The difficulty was, to determine how far the disease actually extended into the tissues: the microscopist could tell us the condition of what was removed, but he could give us no information as to how far the neoplasm had invaded what was left of the patient. The extension of the disease was not always continuous through the tissues, but detached foci might be formed. Certainly, the operation, even if it was to be tolerated at all, had a very limited field, and did not deserve to be generally substituted for other procedures of a less dangerous nature. As he had said last year, it was gambling with human life—staking what did not belong to us. What was meant by "successful operations"? It was not the removal of the organ that was our object, but the removal of the disease; when the latter manifested itself afresh it was not a recurrence, but a continuation—the disease had not been removed at all.

Dr. VAN DE WARKER thought the society should be very cautious in dealing with the questions raised in connection with the subject, lest the impression should again go forth that a more or less authoritative judgment had been given, one way or the other. Really, it was not so much a question of how many survived the operation, but rather as to whether there was any better way of treating the disease. In his opinion, there were other methods that were equally potent and far safer. He would divide cases of cancer of the uterus into two classes: those that occurred before the menopause, and those that occurred after that event. In the first class there was a vigor about the disease that almost insured its return, so far as he could reason from his own experience. It was seldom that the disease could be thoroughly removed in any way, but there were other measures than hysterectomy by which we might come quite as near success, and with far less immediate peril. Nevertheless, he would not contribute to any prejudice against the operation—it should be freely and fairly tested in proper cases.

Dr. ENGELMANN agreed with the author of the paper in almost every particular, interpreting him, not as urging the operation, but as pleading for its subjection to further tests. It might be said to stand upon much the same footing as oöphorectomy, concerning which we were not yet in accord. At present the operation was too young to have made its status, but it was gaining ground, and he knew of better results from it than had been given in the paper. We should do well to bear in mind the early history of ovariectomy, an operation that was now firmly established. As regarded hysterectomy, it was manifest that only those patients who had been subjected to it when it was very young, at a time when the technics might be said to have been comparatively rude, who had had time to live two or three years. Any conclusion drawn from those cases would be premature and unfair; we should wait for further results, for the after-histories of patients operated upon by the improved methods that had now come into use. The results were constantly improving. When patients survived the immediate effects of the operation, they were relieved of their sufferings, whatever the final outcome might be, and who could say that they had not a fair prospect of life?

Dr. PALMER thought the paper showed that the immediate risk from the operation was smaller than had commonly been supposed, and no doubt the mortality would be still further reduced—perhaps to ten per cent. A dangerous operation was not necessarily unjustifiable. The great obstacle to the one under consideration was the difficulty of ascertaining the exact extent of the neoplasm in individual cases. Of course, no one would think of performing it where the parametrium was invaded, but this question could not be determined in half the cases. In the case of the breast, we no longer depended on the state of the axillary glands, as made out by examination, accessible as they were, but always removed them in operations for cancer of that organ; but the remote parts that were liable to be infected from a cancer of the uterus could not be removed, and that fact constituted the great impediment to the success of hysterectomy. On that account, he thought the scope of the operation was likely to be limited to cases of sarcoma originating in the mucous membrane of the body of the uterus.

Dr. BAKER asked if Dr. Mundé meant to exclude the operation when the disease was limited to the cervix.

Dr. MUNDÉ replied that he would so exclude it, provided the case admitted of the removal of all the diseased tissue by any other method.

Dr. BAKER would agree, then, with the views held by Dr. Mundé. Some surprise having been expressed at the great number of operations that he had referred to last year, in the

discussion of the subject, he wished to explain now that he had had in mind operations of all sorts for cancer of the cervix, and not merely hysterectomies. He had had patients who lived longer after the performance of his own operation than any of those who had been referred to to-day, but one of those alluded to at the last meeting had died since, in consequence of a return of the disease. He thought that hysterectomy should be preferred to other operations in cases where the disease extended beyond the cervix.

Dr. SCOTT reported that the results of the operation had not been very favorable in San Francisco, where the mortality had certainly been as high as twenty-five or thirty per cent., but he had in mind one case in which an excellent and rapid recovery had followed its performance by Dr. Cushing, the case being one of epithelioma. The statistics of this operation were no doubt vitiated to a great extent by the necessity of assuming that the diagnoses were all faultless. Conservatism was not always to be adhered to strictly; neither, on the other hand, should we rush in where angels feared to tread. A brother practitioner in San Francisco had been successful with hysterectomy, but nevertheless had given it up, and had adopted a procedure very much like the one which Dr. Baker had described, and, for his own part, he would generally prefer the latter.

Dr. REAMY thought that it was unwarrantable to compare this operation with ovariectomy, as had been done by Dr. Engelmann, for in ovariectomy there was only one danger—that which immediately followed the operation; if the patient recovered, she was for ever safe from a recurrence of the disease. He had seen a number of cases of uterine cancer in which life had been remarkably prolonged without any operative interference, and such cases ought to be taken into account, for it might be that the assumed saving of life as the result of operations was illusory. Operations had improved, but the prognosis of cancer had not kept pace with that improvement. Cancer of the cervix might not return after thorough removal, but, when the disease had spread to the vaginal junction, it would return. It had not yet been proved that the operation prolonged life, but that was no reason for opposing its further trial.

Dr. CHRISTIAN FENGER, of Chicago (present by invitation), had misunderstood the voice of the society last year. There must be a field for vaginal hysterectomy in cases where supravaginal amputation could not reach the disease, and doubtless its practice would be continued until cases had been so accumulated that we should be in a position to generalize with regard to its merits far more satisfactorily than at present.

Dr. MUNDÉ was glad to find himself practically in accord with nearly all the speakers. If there was any room for fallacy in his statistics, the same was true of those that Dr. Jackson had brought forward last year. He admitted the justice of what Dr. Reamy had said about the impropriety of comparing hysterectomy with ovariectomy; but the time might come when the two operations could fairly be compared. It was true that there were two kinds of "successful" operations—those that cured, and those that simply failed to produce death, and it was only in the latter class, perhaps, that hysterectomy could be placed at present. It was a fact, too, that cancer patients did sometimes survive for a surprising length of time without any operative interference, but should we therefore stay our hands and never interfere? He repeated that he did not wish to be understood as the special advocate of the operation; but he would urge that it ought not to be discarded on purely theoretical grounds.

Thursday's Proceedings.

The Present Aspect of the Puerperal Diseases (the President's Address).—According to the programme, the PRESIDENT was to have read his address on the morning of the second day,

but at that time he was prevented from doing so by sickness. He now called Dr. Byford to the chair, and proceeded to read portions of the address which he had prepared. After some preliminary remarks on the purity of feeling which should characterize the conduct of those who were called upon to deal with such delicate matters as the surgical diseases peculiar to women, the proper subject of the address was reached—the different theories of the pathology and ætiology of the affections grouped under the term puerperal fever. In particular, the President reviewed the discussion that took place at the New York Academy of Medicine last winter. He incidentally expressed his surprise that it should be said of certain morbid organisms that they produced disease, and yet that they were powerless for harm when introduced into a healthy system. He could not reconcile the two statements. At the conclusion of the address he explained his method of treating the uterus after delivery, and showed some glass tubes which he used in administering intra-uterine injections. It was a matter of routine with him to wash out the uterus with a hot bichloride-of-mercury solution.

On motion of Dr. REAMY, a vote of thanks was passed for the address, and for the manner in which the President had presided during that portion of the time that his condition had allowed of his occupying the chair.

Some Remarks on the Occipito-posterior Position in Vertex Labors; with an Analysis of Thirty-five Cases.—Dr. SAWYER then read a paper with this title. The special point brought forward in the paper was, that in such cases anterior rotation of the occiput did not take place so frequently as was set down in the books; indeed, the author was not sure that he had ever witnessed it. Most of the cases that he had met with had been in primiparae, and he was inclined to think that the tense condition of the anterior abdominal wall in primiparous women was the cause of the position, by interfering with the anterior obliquity of the uterus that was found in pluriparous women. The child's body being so firmly forced back against the mother's spine, he thought it was better accommodated with the back directed posteriorly. For the rectification of the position, it was of the greatest assistance to place the patient on the side, in the English obstetric position, and he had found the manœuvre much facilitated by the use of a forceps of his own devising, a specimen of which was shown. It was so fashioned that the Shank and the blades formed one continuous curve. The paper was illustrated with a drawing copied from Snellie.

Dr. WILLIAM L. RICHARDSON, of Boston, thought that such cases were the most common cause of trouble to ordinary practitioners. He was obliged to disagree with Dr. Sawyer on some points, particularly with reference to rotation. He had always seen it occur at the pelvic floor, unless there was some obstruction in the excavation. The position could usually be detected early by abdominal palpation, the back being found situated to the right, while the anterior fontanelle was easily made out on vaginal examination. In cases that had been mismanaged, he should first remedy the extension of the head, and this he had often succeeded in doing by the use of the forceps applied in the reverse direction—i. e., with the concave border of the blades directed backward. Of course, the instrument should be removed when flexion had been accomplished.

Dr. REAMY thought that, although occipito-posterior positions were not rare, they were by no means so frequent as might be inferred from the number of cases with which Dr. Sawyer had met. Rotation would generally occur, sooner or later, but it was another question whether we should interfere to shorten labor. If we did interfere, it should be not because there was any doubt that rotation would take place, but because there was some particular feature in the case which made

it incumbent upon us to do so. In regard to manual rectification of the position, he had never been able to accomplish it with one or two fingers, and he therefore would wait until the cervix was sufficiently dilated to admit of the introduction of the hand. In attempting artificial rotation, we should pay attention to the details of the original position, particularly being guided by the fact of the occiput having been directed to the right or to the left side. He had used the forceps reversed, as described by Dr. Richardson, but most commonly he applied it "normally." He could not see the need of the position on the side, and the ordinary forceps would serve the purpose, he thought, quite as well as the instrument that had been shown.

Dr. JOSEPH TABER JOHNSON, of Washington, concurred with what Dr. Reamy had said with regard to the rectification of the position.

Dr. HOWARD spoke of the advantages of Tarnier's forceps in such cases.

Dr. ENGELMANN could not see that the forceps shown by the author of the paper was specially calculated to prove of service in cases of occipito-posterior position of the head.

The PRESIDENT thought the common cause of difficulty in these cases was the failure of flexion of the head to take place early, so as to favor synclitism, and often, as had been said by Dr. Richardson, the only interference necessary was to produce this flexion with the forceps. It was his experience that rotation would occur spontaneously in the vast majority of cases—always unless there was something abnormal. It was true that this failure of flexion was most commonly met with in primiparae. He knew of no satisfactory theory of the causes of the position. Rectification, either with the hand or with the forceps, would generally succeed if resorted to before the head had become engaged, but, when it was attempted at a later period, it was apt to prove unsatisfactory, on account of the head resuming its previous position when the correcting force was removed. In any case of pelvic deformity he would certainly attempt artificial rotation when the head was above the brim, but, after it had engaged, he would draw it down with the forceps, making flexion at the same time. Rotation would take place in consequence of the advance of the head, and not from any manipulation by twisting with the forceps. The instrument should be removed when the head assumed a transverse position, and often it would not need to be applied again.

Dr. SAWYER preferred the English posture simply as a matter of convenience. Perhaps the rarity of spontaneous rotation in his experience had been due to the fact that he had almost always interfered early. He laid no particular stress on the forceps that he had shown.

Dr. REAMY added, as to the frequency of posterior positions, that he had met with them about five times in every hundred cases.

A Rare and Fatal Form of Sepsis without Symptoms.—

At the afternoon session Dr. ENGELMANN read a paper with this title, the President-elect, Dr. Howard, in the chair. The reader related the chief features of two cases of the sort to which he alluded. There were really no definite symptoms, at least none at all calculated to point to a diagnosis, and those that were present varied from the phenomena ordinarily found in cases of septicæmia. A peculiarity of the cases, so far as he had observed, was that they all proved fatal. In puerperal cases the absence of symptoms was not quite so complete as in those that occurred independently of childbirth. The statement had been made by Dr. Barker that the symptoms of septic poisoning varied in intensity according to the amount of septic material that had been absorbed. From this statement the author would dissent, also from the same writer's view that the elevation of temperature was an index of the quantity of poison

that had been taken into the blood, for in these cases there was no fever. Besides the two cases reported, reference was made briefly to four or five others, and it was stated that they had occurred in connection with various morbid conditions.

Dr. RICHARDSON had seen five or six cases among puerperal women, and their nature had been ascertained post mortem. Without any special symptoms, the patients simply "faded out." In all his cases the pulse and temperature had been normal or nearly normal.

Dr. REAMY had seen a number of cases that answered to the description given.

Dr. JOHNSON had seen one case which he now thought was of the class under consideration. In that case the patient's friends had charged at the time that the death was due to the use of chloroform.

Dr. ENGELMANN closed the discussion with a review of the statements he had previously made, emphasizing the fact of the fatality of all the cases.

Papers read by Title.—During the meeting the following papers were read by title: The Hygiene of Pregnancy, by Dr. Samuel C. Busey, of Washington; Rapid Dilatation of the Cervical Canal, by Dr. William Goodell, of Philadelphia; The Physiognomy of the Vulva as a Sequence of Anal Disease, and the Cause or Sustaining Cause of Uterine Disease, by Dr. Isaac E. Taylor, of New York; The Early History of the Treatment of Vesico-vaginal Fistule in the United States, and the Statistics of the several Modes of Operating, by Dr. Nathan Bozeman, of New York; Periodical Symptoms in Uterine Disease, by Dr. George J. Engelmann, of St. Louis; Contributions to the Topographical and Sectional Anatomy of the Female Pelvis, by Dr. David Berry Hart, of Edinburgh, Scotland; Fibro-myomata and Fibro-cystic Myomata of the Uterus—their Diagnosis, Prognosis, Pathology, and Treatment, by Dr. R. Stansbury Sutton, of Pittsburgh; On the Ring of Bandl, by Dr. William T. Lusk, of New York.

The Business Meeting was held Wednesday evening. An amendment to the By-Laws was adopted by virtue of which nominations for fellowship need not in future have the indorsement of the Council, and an amendment to the Constitution making the limit of membership one hundred instead of sixty. Officers for the coming year were then elected as follows: President, Dr. WILLIAM T. HOWARD, of Baltimore; vice-presidents, Dr. WILLIAM L. RICHARDSON, of Boston, and Dr. PAUL F. MUNDÉ, of New York; secretary, Dr. FRANK P. FOSTER, of New York; treasurer, Dr. MATTHEW D. MANN, of Buffalo; other members of the Council, Dr. JOSEPH TABER JOHNSON, of Washington, Dr. A. REEVES JACKSON, of Chicago, Dr. HENRY P. C. WILSON, of Baltimore, and Dr. ELY VAN DE WALKER, of Syracuse. It was voted to hold the next meeting in Washington, on the third Tuesday of September, 1885, and the following Wednesday and Thursday. Dr. GEORGE GRANVILLE BANTOCK, of London, England, was elected an honorary fellow.

Members by Invitation.—At various times during the meeting the following-named gentlemen were invited by vote to take part in the proceedings: Dr. E. C. DUDLEY, Dr. W. E. CLARKE, Dr. T. P. SEELEY, Dr. N. S. DAVIS, Dr. LISTON H. MONTGOMERY, Dr. RALPH E. STARKWEATHER, Dr. A. H. BURR, and Dr. GEORGE H. RANDELL, all of Chicago; Dr. P. McCLOURE, of Dubuque, Iowa; Dr. HENRY G. DEARBORN, of Nashua, N. H.; Dr. J. H. CARSTENS, of Detroit; Dr. T. B. HARVEY, of Indianapolis; Dr. FRITZ NETZLER, of Stockholm, Sweden; Dr. FRANK WOODBURY, of Philadelphia; Dr. WESLEY M. CARPENTER, of New York; Dr. W. H. MYERS, of Fort Wayne, Ind.; Dr. J. H. RAUCH, of Springfield, Ill.; Dr. J. K. BARTLETT and Dr. WILLIAM FOX, of Milwaukee; and Dr. T. A. ROGER, of Montreal.

Miscellany.

The American Public Health Association will hold its twelfth annual meeting in St. Louis on Tuesday, Wednesday, Thursday, and Friday, October 14, 15, 16, and 17, 1884. The meeting will be held in Liederkrantz Hall, on the corner of Thirteenth Street and Chouteau Avenue. The following are among the papers that are expected to be read: The Hygiene of the Habitations of the Poor, by Major Samuel A. Robinson, of the District of Columbia, Dr. C. W. Chancellor, of Maryland, and Dr. W. K. Newton, of Paterson, N. J.; The Hygiene of Occupations, by Dr. G. H. Rohé, of Baltimore, Dr. Walter Wyman, of the Marine Hospital Service, and Dr. J. W. Chambers, of Baltimore; School Hygiene, by Dr. S. W. Abbott, of Massachusetts, Dr. E. M. Hartwell, of Baltimore, Dr. S. O. Richey, of Washington, and Dr. Felix Formento, of New Orleans; The Adulteration of Food, by the Hon. Erastus Brooks, of New York, Professor H. B. Cornwall, of Princeton, N. J., Professor C. E. Munroe, of the Naval Academy, Dr. V. C. Vaughan, of Ann Arbor, Mich., and Dr. J. C. Morris, of Philadelphia; Water Pollution, by Dr. Charles Smart, of the army, Dr. Henry B. Baker, of Michigan, and Dr. T. M. Stevens, of Indianapolis; The Disposal of Sewage by Irrigation or Chemical Action, by Dr. H. P. Walcott, of Massachusetts, Mr. G. N. Bell, of Newport, and Dr. W. J. Harris, of St. Louis; The Observable Effect upon the Public Health of Official Sanitary Supervision, by Colonel G. E. Waring, of Newport; The Work of Municipal and State Boards of Health, by their secretaries: Disease Germs, by Dr. G. M. Sternberg, of the army, Dr. L. Bremer, of St. Louis, Dr. W. W. Vinneedge, of Indiana, and Dr. W. H. Stillwell, of Tennessee; Cremation as a Sanitary Measure in Times of Great Epidemics, by Dr. John Morris, of Baltimore, and the Rev. J. D. Beugless, of the navy; A Survey of the Present Sanitary Situation in St. Louis (a series of short papers by city officials and local sanitarians); On Heating and Ventilation, by Dr. C. O. Curtman, of St. Louis; On Protective Spectacles, by Dr. A. Alt, of St. Louis; On the Prevention of Syphilis, by Dr. J. D. Gatch, of Lawrenceburg, Ind.; On the Hygiene of the Nervous System and the Mind, by Dr. C. H. Hughes, of St. Louis; and On the Sanitary Management of Railway Cars and Stations, by Dr. W. T. Parker, of the army.

The Health of Michigan.—We have received from the secretary of the State Board of Health of Michigan, Dr. Henry B. Baker, of Lansing, a report of the principal diseases prevailing in the State during the month of September, 1884. The report indicates that, as compared with the preceding month, there was an increase of typho-malarial and typhoid fevers, and a decrease of cholera morbus, cholera infantum, diarrhoea, and dysentery. Compared with the average for the month of September in the six years, 1879 to 1884, there was a diminished prevalence of intermittent fever, typho-malarial fever, diphtheria, pneumonia, and remittent fever. There was no marked increase in the prevalence of any disease reported in the month, compared with the average for that month. The temperature was higher, the absolute humidity was greater, and the relative humidity and the day and the night ozone were less. Diphtheria was reported from twenty-five places: Armada, Bloomfield, Detroit, Douglas, East Saginaw, Edmore, Fowlerville, Flint, Grand Rapids, Hastings, Handy, Ionia, Ishpeming, Ithaca, Kalamazoo, Marquette, Mendon, Muskegon, Port Huron, Prairie Ronde, Romeo, Sand Lake, South Haven, Vassar, and Wyandotte. Scarlet fever was reported from seventeen places: Cadillac, Detroit, Dorr, Dowagiac, Fairfield, Grand Rapids, Howard City, Ionia, Jerome, Kalamazoo, Monroe, Muir, Muskegon, Swartz Creek, St. John, Vicksburg, and Wexford. Measles was reported from Detroit and Whitehall.

The Health of the State of New York.—The "Monthly Bulletin of the New York State Board of Health" for August, in which it is stated that the returns from the country towns are still far from complete, shows that the total mortality reported for the entire State during the month was 6,950. The percentage of infant mortality was very nearly the same as for July, being 35.8. The percentage of deaths from diarrhoeal diseases was 24.8; in July it was 30.5. Twenty-two of the twenty-four cities in the State return an aggregate mortality of 5,611, corresponding to an annual death rate of 21.21 in a thousand.

Lectures and Addresses.

A CLINICAL LECTURE,*

DELIVERED (BY REQUEST) AT BELLEVUE HOSPITAL,
SEPTEMBER 20, 1884.By LAWSON TAIT, F.R.C.S.,
BIRMINGHAM, ENGLAND.

GENTLEMEN: The first case of which I have to speak this morning is a very typical one of a disease with which possibly many of you have heard my name associated. It is not a new disease, for we find in the writings of the authors of our medical classics that the disease is very well described. You will find, under the term "*colica scortorum*," a group of symptoms given which, to my mind, clearly indicate the disease of the Fallopian tubes of which I have to speak. The disease was also fully described and figured in text-books before I was born, and yet there are people in my own country who foolishly say that it does not exist, or that, if it does, examples of it are found only in Birmingham, where I live.

The patient in question is a young woman, about twenty-eight years of age, of very healthy appearance. She gives a history of a very definite kind, and she tells us that for five years her life has been one of prolonged misery. Her sufferings began immediately after marriage, with intense scalding pain in the vagina, accompanied by a profuse purulent discharge. She has never been free from pain since; and her menstruation has become too frequent and too profuse, always characterized by intense pain, this pain beginning some time before the period shows itself, and lasting throughout the time. Her appearance does not indicate serious disease, nor intense suffering; yet she has a very serious malady—a malady which is often fatal, and one which is accompanied by great agony; and it is entirely incurable except by the operation I am about to perform.

The disease I am speaking of is pyo-salpinx, and, before I operate, I had better tell you a little of the origin and course of the disease, and the difficulties and dangers incident to it.

This woman acquired gonorrhœa from her husband at the time of marriage. She does not know this, and there is no need that she should. The history is a complete and perfect one, for, if a woman tells you that soon after sexual intercourse she was attacked by pain and swelling in the passage, scalding in passing urine, and a profuse purulent discharge, you may assume that she has had a gonorrhœa inflicted upon her, and there will not be much probability of your being wrong.

Gonorrhœa has been considered until lately as a very harmless disease in women, but this is a great mistake. In men, gonorrhœa is a very serious disease. I do not see the disease in men at all, but I have heard from the lips of a master in surgery that in a man gonorrhœa is quite as serious as syphilis, and that a bad stricture is practically incurable, its effects being evident through

life. The urethra of a woman is so short and so distensible that stricture there does not occur; at least I have never seen it, nor have I heard of its occurrence, so that it must at least be very rare. But there are other organs in women affected by gonorrhœa in a very fatal way—in a way that gives rise to untold agony. Every one who deals in the special diseases of women knows the chronic endometritis which remains after a gonorrhœal vaginitis has been cured. But, until I pointed it out, some four or five years ago, the fact was not known, or at least had been completely lost sight of, that the gonorrhœal inflammation spread along the Fallopian tubes and gave rise to immense mischief. You know that, from time to time, the infundibular end of the tube becomes temporarily attached to the ovary, and, if there is a gonorrhœal inflammation going on, this temporary attachment becomes a permanent one, or it may be that the infundibulum becomes adherent to intestine, bladder, pelvic wall, or other object. In any way, the outer end of the inflamed tube gets occluded, and this is the first stage. This occurs with an attack of pelvic peritonitis, of which you can get a clearly defined history in very many cases, and, looking back on my experience in former years, I know now that at least one mysterious and unexplainable case of fatal peritonitis could have been explained as arising in this way.

You know, of course, that, like all mucous conduits, the Fallopian tubes have as one of their functions the secretion of a mucus. In addition to this, they take part in the special secretion of blood which forms the menstrual fluid. With one end occluded, and in a state of chronic inflammation, their secretions are exaggerated in quantity, as is the case always with mucous surfaces when inflamed, and we have the second factor of the disease produced—distension of the tube. When the uterine opening of the tube remains patent, the morbid secretion is squeezed out into the uterus, and there can be no doubt—in fact, I know it now for a certainty—that there are instances in which the tubes, distended even to a very large size between the menstrual periods, are emptied in this way by the contraction of their walls, this emptying being accompanied by agonizing pains like those of labor.

Let me pause here to say that not all the cases of pyo-salpinx can be traced to gonorrhœa, and that there are many other causes; also that, when the tubes are occluded and distended, the distending fluid may be serum or menstrual blood—not always pus. But the nature of the contained fluid is of no importance, so far as the symptoms are concerned; the sufferings are quite as severe in hydro-salpinx as in chronic pyo-salpinx. But the risk to life, in pyo-salpinx, from rupture of the tube and discharge of the pus into the peritonæum, is very great. So far as we know, this accident occurs in more than fifty per cent. of the cases. Such rupture, in hydro-salpinx, would probably be of little importance, and I know that its occurrence leaves the patient, for some time at least, free from suffering. But you can not tell exactly, before you operate, whether the patient will be found to suffer from hydro-, pyo-, or hæmato-salpinx. Therefore your diagnosis never will be

* The lecture was kindly written out by Mr. Tait for the journal.

exact. Even with my large experience, I am wrong about one case in five. I believe this patient has pyo-salpinx. We shall see.

In these operations I have had kind offers of assistance from critics without any kind of experience, who have told us, like a physician, of this city, that it is justifiable to operate in pyo-salpinx, but not in hydro-salpinx. I suppose he means that we should pull out the diseased organs, and, if we find hydro-salpinx, put them back again. No other meaning can be attached to his words. The rule I have long since adopted and acted upon is, if I find a woman suffering intensely from the symptoms I have described, with physical evidences of disease of the appendages, to advise her to submit to abdominal section, and to perform it if she accepts the responsibility. We are enabled to do this by the small mortality which now follows these operations since Listerism was abandoned.

Other proposals have been offered to deal with these cases by tapping them, but, as my friend Dr. Emmet happily expressed it to me last night, "You want a lot of finger-posts in there, and there are none." You can not tell where the tubes are; you can not even say, in many cases, that it is the tubes at all that are affected till you have them out. Such a recommendation can come only from a reading-room surgeon, not from one who talks from the operating-table.

You see that I have now removed the uterine appendages, and the operation was a very difficult one. I have made a very small incision—enough only to admit two fingers. As soon as I got inside the peritonæum I found the effects of the primary inflammation. Everything was massed together, and the omentum glued over the pelvis. Making an aperture in that membrane, I searched about till I found the fundus uteri, and in this I had a finger-post. Running from it, on the left, I found a dilated tube, and, gradually easing it from its attachments, I came on a large cystic mass. This also had to be separated with great care, and you saw that the hæmorrhage was pretty profuse. The adhesions were very firm, and great care is required in the undoing of such, for it is an easy matter to tear intestine, or even the bladder may be damaged. The great misfortune of these operations is, that no one, not even the operator, can see what is being done. The base of the tumor was secured by a ligature and removed, and the same procedure was carried out for the appendages on the right side.

You see that the tubes are occluded, and distended like small convoluted sausages, and, when I squeeze them, there exudes from the mammilla of the divided tubes a quantity of grumous pus. The disease is, therefore, pyo-salpinx, and the diagnosis was quite right.

Let me say only one word more about the skepticism concerning the real existence of this disease, and my method of treatment of it. This skepticism has been banished on this side of the Atlantic, because your surgeons have come over to me and have seen my cases, have watched them recover, and have taken the preparations with them for public exhibition. My friend, and your teacher, Professor Lusk, was skeptical, and he came over, saw a case, returned home, and speedily found a case, operated, and cured his

patient. New York is twelve days distant from Birmingham, of hard travel, and large numbers of your countrymen have come. London is only a three hours' easy journey from Birmingham, yet the London skeptics do not come to see me, and Sir Spencer Wells says he has never seen a case of this kind.

Two words I have to say in parting from you—the first, in answer to a question constantly put to me, as to why it is that I get such splendid results in England, while here your operations are followed by a terribly heavy mortality. I can see only one point to which I can draw attention, and that I ask you carefully to consider. There are too many of you engaged in the work. It would almost seem to me as if every one was anxious to signalize his life by some effort or two in abdominal surgery. This will never lead to success. It can only fall to the lot of a few to operate often enough for the obtainment of complete success. Your chief aim must be the exaltation of the art you practice, and the great majority need, therefore—ought, therefore—to practice self-denial, and hand over such cases to the few who can make their treatment the object of their lives.

For years I have felt a doubt as to the propriety of such operations being performed in a large hospital, and before such an enormous audience as this, and, until a few days ago, I have never so operated. Many of my beliefs have been rudely shaken, and the doubt I have mentioned may go the way of others. But, even if it should be justified by these patients' not recovering (and two out of the four are already out of danger), something has to be said on the score of the need for the justification of my practice by showing it to the multitude. If all four recover, then I may feel that my doubt has been undermined.

My last word is one of farewell. I can hardly speak without emotion of the overwhelming kindness I have met with in my short tour through your splendid country. You show here, to an extent I fear we have not yet reached in my own land, the tender grace of courtesy.

Original Communications.

THE USE OF COMPRESSED AND RAREFIED AIR, AS A SUBSTITUTE FOR CHANGE OF CLIMATE, IN THE TREATMENT OF PULMONARY DISEASES.*

By J. SOLIS-COHEN, M.D., Etc.,
PHILADELPHIA.

THE great desideratum in exiling *poitrinaires* is to secure to them an opportunity of being in the open air, so that their lungs shall have a proper respiratory diet. Such pabulum, taken naturally, is far superior to any artificial administration. But, for the benefit of individuals whose lack of money or whose domestic duties preclude their resort to a temperate climate, there is a substitute in periodic inhala-

* Read before the American Climatological Association, May 5, 1884.

tions of air subjected to modifications of pressure. In many cases fully as much good can be secured by this treatment as by change of climate, and in a few much more; though, in the vast majority of cases in which change of climate is advisable, it is but a poor substitute. Its efficacy, however, has never been appreciated in the United States, although fully recognized in Europe, especially on the continent.

For some twenty years I have made occasional resort to this method of treatment as suitable cases presented; but special lines of practice have so closely occupied time and thoughts that the method has never been pushed for the purpose of attracting patients, while little has been contributed by me to the literature of the subject, save that written in the two editions of my "Treatise on Inhalation" (Philadelphia, 1867 and 1876).

The time required for the proper administration of an inhalation of compressed or rarefied air—from twenty to thirty minutes—is too great for a busy practitioner to bestow daily, or twice a day, upon individual patients; and it is only by massing patients, and having them inhale simultaneously from a number of apparatus, that this department of practice can be rendered sufficiently remunerative to attract careful supervision. Hence it is mainly confined to institutions fitted up for the purpose, and has not become incorporated into private practice. Patients whose means permit them to purchase apparatus for their own use can be instructed how to take their inhalations at home; and the method of treatment will begin to receive the professional attention it merits whenever apparatus of moderate cost can be supplied for this purpose. Hitherto the apparatus constructed with this view have been too costly and too cumbersome. An approach to a suitable contrivance for inhaling compressed air has been made in my own office by the combined efforts of my brother, Dr. Solomon Solis-Cohen, and Mr. Charles Richardson, physicist in Queen & Co.'s establishment, Philadelphia.

This apparatus, like that of Waldenburg and some others, utilizes the gasometer principle—a principle which years of experimentation with different methods have convinced me is the best adapted to the purpose. By weighting the inner cylinder (air-chamber) at the bottom, accurately adjusting its diameter to that of the outer one (water-chamber), and pumping the air into it by means of a foot-bellows, the cumbersome arrangement of ropes and pulleys is done away with, and the size of the machine considerably reduced. One of these instruments (Fig. 1), which has been in office use more than six months, consists of an inner hollow cylinder 12 inches in diameter and 20 inches* high, open at the bottom, but having two shelves, as it were, upon which to rest the weights—as if the cylinder had been covered in, top and bottom, and a longitudinal strip cut out of the middle of the base. The outer cylinder, open at the top, is just enough larger than the inner cylinder to enable the latter to slide up and down in it without grooves or flanges upon either. A rim upon the inner cylinder prevents it from sinking quite to the bottom of the water-chamber—a

preservative device. A tank to catch the water displaced by pressure is placed around the outer cylinder, reaching about half way down, and communicating with the cylinder by means of a row of holes bored in the cylinder at the level of the base of the tank. The diameter of the upper rim of the tank is 16 inches. A line painted on the outer cylinder indicates the water level, and a line painted on the inner cylinder indicates how high it may be pumped without being thrown out of the water. Both of these points, while susceptible of calculation, are conveniently ascertained by experiment with the highest pressure intended to be used.

The weights are of lead, segments of circles in shape, so as to assist in maintaining the equilibrium of the inner cylinder. A very simple calculation will give the proper weight for every fraction of an atmosphere intended to be used.* Thus, with an air-chamber of 12 inches diameter, upon which there is an atmospheric pressure of about 1,696.50 pounds, we should need, in round numbers:

For $\frac{1}{10}$ of an atmosphere,	24 $\frac{1}{2}$ pounds.
For $\frac{1}{10}$ " " "	28 $\frac{1}{2}$ "
For $\frac{1}{10}$ " " "	34 "
For $\frac{1}{10}$ " " "	42 $\frac{1}{2}$ "

The inner cylinder weighs a little over four pounds. Placing on its shelves twenty pounds, we augment the pressure by $\frac{1}{10}$ of an atmosphere, and the additional weights are placed atop of it as required. A gauge may be attached at a slight additional expense; but it is unnecessary, as the pressure is verified by the manufacturer before delivery of the apparatus. Of course, the top of the inner cylinder is pierced with two holes, into which are fitted two goose-necks—one for the attachment of the tube from the bellows, the other for the attachment of the tube to the stop-cock and mouth-piece—Waldenburg's being at present employed in the absence of a better form. The water may be run in through either of these pipes, and drawn off by means of a stop-cock at the bottom of the outer cylinder. When it is desired to cleanse the apparatus, the inner cylinder may easily be lifted out. The expense of the gasometer, weights, bellows, and tubing is in the neighborhood of twenty dollars; but the manufacturers think that, if sufficient demand exists to warrant making the apparatus in quantity, this figure can be reduced to fifteen dollars. The accompanying diagrams will render the description of the apparatus clearer.

The immediate effect of inhaling compressed air is to dilate the lungs and thorax to a greater extent than can be accomplished by the deepest possible voluntary inspiration at the ordinary pressure. The inspiratory portion of the respiratory act is thus greatly facilitated. To avoid rupture of the air-cells, it is not safe, especially with invalids, to employ a greater pressure than from $\frac{1}{10}$ to $\frac{1}{6}$ additional atmospheric pressure at first, gradually increased to $\frac{1}{4}$ or $\frac{1}{3}$. The $\frac{1}{3}$ additional pressure need never be exceeded. This method of treatment is indicated in early phthisis, in chronic bronchitis, in the partial collapse of lung sometimes following pneumonias, and, in fact, in all cases in which it is desirable to augment the vital capacity of the lungs, except in those instances where there exists a strong disposition to

* A machine 18 inches high can be used; one 24 inches high will give better mechanical results.

* This has been ascertained by experiment to be the best size.

hemorrhage. As the increased pressure on the intrathoracic organs increases the general intravascular pressure, it

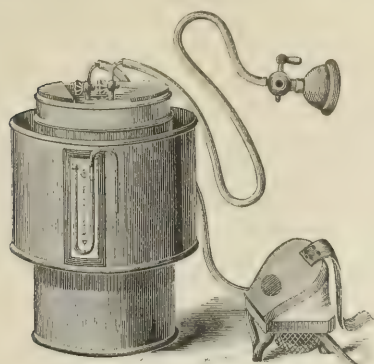


FIG. 1.—Cohen and Richardson's Compressed Air Apparatus.

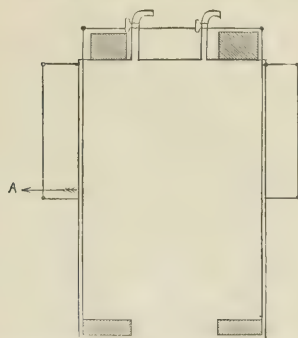


FIG. 2. Section showing the method of weighting the inner cylinder. At the level of the arrow, A, a row of holes is bored through the outer cylinder to permit the escape of water.

is easy to understand that such treatment is imprudent in individuals disposed to hæmoptysis, hæmatemesis, epistaxis, hæmorrhoids, or other blood-loss.

The immediate effect of *expiration into compressed air* is to impede that portion of the respiratory act. This will tend to dilate the air-cells and rectify collapsed lung by backward pressure, so to speak, thus accomplishing the same results as inspiration of compressed air. The only advantage gained is in the muscular effort necessary to breathe into compressed air, and this can be well utilized in cases in which it may be an object of importance to increase the power of the respiratory muscles by systematic gymnastic exercise. For weak patients the method is unsuitable. Tendency to hæmorrhage is a contra-indication for the process.

The immediate effect of *inspirations of rarefied air* is by diffusion to tend to diminish the pressure of the air in the lungs. The greater pressure of the atmosphere externally is demonstrated by recession of the intercostal parietes, and of the soft parts above and below the sternum. The method thus acts as a gymnastic exercise for the muscles of respiration. The special therapeutic effect approaches

that produced by residence at high latitudes, for which in certain cases it may prove an acceptable substitute.

The immediate effect of *expirations into rarefied air* is to exhaust a portion of the residual air in the lungs and thus favor the collapse of the distended air-cells. The indication for the practice of the method is found in asthma and in pulmonary emphysema. And here I believe the home treatment by apparatus is often more efficacious than change of climate.

Had the pressure of other duties permitted, these remarks would have been extended, and the value of the various plans of treatment would have been illustrated by the records of typical cases. Even in the study of pulmonary diseases alone, we need to consider the effects, both immediate and mediate, upon the heart and circulatory system in general, produced by the use of these methods. The systemic effects, too, such as increased appetite and improved digestive powers, in some cases of phthisis, deserve a modicum of attention. But the writer's object has been accomplished in simply recalling attention to a neglected therapeutic art, in the hope that some of those present, or some of those who may read the report of the papers presented at this meeting, may be incited to study the subject more thoroughly.

It may be added, in conclusion, that auscultation and percussion during respiration of air subjected to compression or rarefaction bring out in relief special phenomena obscure or doubtful under the ordinary methods of auscultation and percussion, while some sounds are evolved which otherwise escape detection altogether.

HERPES LARYNGIS.*

By S. H. CHAPMAN, A. M., M. D.,

NEW HAVEN, CONN.

HERPES LARYNGIS is a rare disease. During the past six years the writer has seen five cases, while of pharyngeal herpes his note-books give account of more than one hundred cases.

The proportion, then, is about one in twenty.

The disease is, probably, not so rare as it seems, since the difficulty of diagnosis is greatly increased by the rapid appearance and disappearance of the eruption.

No doubt many cases of so-called simple neuralgia are really cases of herpes, the eruption not being observed.

The cases will be first briefly described, and afterward conclusions be drawn from them, in so far as it seems possible from so small a number.

CASE I.—A lady, twenty-two years of age, soprano in one of the largest churches in Connecticut, consulted the writer in June, 1878, because of harsh, discordant voice, and entire loss of singing-tones. During the spring preceding she had suffered from one attack of malarial fever, and continuously from the general symptoms of dumb-ague. A week before her visit, pain began to be felt in her throat of a lancinating character, notwithstanding which she sang the day following with good tones; but, by Tuesday following, the voice became husky and suddenly discordant. There had been no cough, and no percep-

* Read before the American Laryngological Association, May 14, 1884.

tible expectoration. Her nervous system had been profoundly affected during these few days by pain, loss of sleep, agitation, and great anxiety. Her pulse and respiration were normal.

The physical examination showed a moderate congestion of the larynx and cords, and a deep, clean-cut, non-exuding ulcer near the middle of the left vocal cord, extending at least one third of the depth of the cord. Muscular action was perfect. In connection with this was also a pharyngeal herpes, and the same eruption upon the lips. The diagnosis was thus made easy, but the prognosis seemed to the writer doubtful.

The patient was ordered inhalation of tincture of benzoin with oil of eucalyptus, and the internal administration of quinine and arsenic, and was told that it was quite possible that the voice would remain permanently injured. In September she presented herself again, with the report that all pain had passed away after a few days from her first visit, and that, in two weeks' time, her voice had again become clear, but that she had not yet returned to her music. This the writer permitted her to do upon finding the larynx again in a normal condition.

CASE II.—A machinist, aged twenty-nine, living in a malarious district, having suffered more or less severely for several years from malarial disease in different forms, was taken ill about ten days before his visit (April, 1879) with intense pain in the throat, cough, some pain in swallowing, and slight dyspnoea. These symptoms were rapid in development, and accompanied by the nervous agitation and anxiety so prominent in Case I.

Physical examination disclosed large, irregular ulcers, with clean-cut edges, in both ventricles; the surrounding tissue swollen, but the vocal cords normal and muscular action perfect.

There appeared to be no eruption elsewhere upon the mucous membrane. The ulcers were so intensely painful, even from the air passing over them, that the attempt was made to reduce this by the local application of glycerin, of glycerin and borax, and, finally, of a weak solution of silver nitrate.

Instead of diminishing, it seemed to increase the irritation, and the same treatment was adopted for this as in Case I.

Anodynes were also found necessary. The ulcers healed slowly, but the pain and distress disappeared within a week.

In September, 1879, the patient presented himself suffering from a second attack, during which the eruption occurred on the right side only.

CASE III.—A gentleman, an editor by profession, aged twenty-seven, had, in the spring of 1880, a severe attack of malarial fever, following some days of shooting on Long Island.

The fever left him debilitated and suffering from the ordinary symptoms of chronic mild malaria.

In June, the day following an after-dinner speech, he was seized suddenly with severe pain in his throat, "agonizing," he said, in character, with fever and rapid pulse, accompanied by a feeling as of some "impending calamity." On the day after the pain was first felt he had difficulty in swallowing solid food on account of the pain produced during its passage over the epiglottis. Food seemed to stick in his throat.

On this account he became, within a few days, quite weak, took to his bed, and had the appearance of great illness. There was with it a constant tickling and stinging which caused a dry, wearing cough. He began to speak in a whisper, because a loud tone seemed to increase the pain. There was no great emaciation, but sufficient to make one think at once of tubercular laryngitis.

Physical examination showed a severe pharyngeal herpes, and a large, ragged ulcer with perpendicular walls, extending over almost the entire posterior surface of the epiglottis to the

left of the median line, and involving also a small section of the border of the epiglottis as well. The entire epiglottis seemed swollen and inflamed. Touching the ulcer with a silver probe produced exquisite pain and a severe attack of spasmodic coughing.

Upon questioning him, it was discovered that one of the peculiar affections following the malarial attack had been herpetic eruption, developed rather generally, but especially about the face and back.

The constitutional treatment by quinine, arsenic, and strychnine was adopted at once, and the local treatment consisted of inhalations of benzoin, oil of eucalyptus, and oil of hops. The pain from swallowing was so intense that the endeavor was made to coat the ulcer with benzoin in saturated tincture. This was quite successful, but it was necessary to renew it several times daily. The eruption was very slow in disappearing.

In three weeks the original ulcer healed, but there appeared at this time a second upon the opposite side of the median line, smaller in extent than the first; and since the border of the epiglottis was not implicated, the swallowing of food caused no pain. The entire duration of the disease was between six and seven weeks.

At that time he was ordered to the sea-shore, and fully recovered his health during the autumn.

His throat has been examined since then—the last time two months ago—and been found to be in perfect condition.

CASES IV, V, and VI are very similar to Case III—one of the patients a woman aged thirty-nine, and the others men of about forty years of age, living in good circumstances, but in specially malarious regions. The affection in all was situated on the posterior surface of the epiglottis. In all three, relapses occurred; and in one, Case VI, relapses have occurred so often that it is doubtful whether a permanent cure can be effected, except by change of climate.

In all three the nervous symptoms were very prominent. At first flesh was lost rapidly, and recovery came slowly.

In one, Case V, the writer expected the eruption before it appeared; on account of the preliminary symptoms, a careful examination of the larynx was made for several days, and was rewarded by the observation of the growth through all its stages, from a small red point to a vesicle, and finally to an open ulcer.

The following conclusions may be drawn from these cases, although it must be distinctly understood that any conclusions from so few cases must always be subject to modification:

1. There exists such a disease of the larynx as herpes.
2. Its character is that of a neurosis.
3. It is closely allied to herpes of the pharynx and other mucous membranes.
4. It differs from other forms only on account of the peculiar microscopic anatomy of the larynx.
5. It is peculiarly a disease of malarious districts, and one of the eccentric developments of malaria.
6. It simulates tubercular inflammation of the epiglottis. The differential diagnosis, however, is easy. It is based upon the extreme rapidity of development, the absence of fever, the history of malarial affections, the previous or simultaneous development of herpetic eruption elsewhere, and the rapid disappearance of the disease.
7. Its seat is usually the posterior surface of the epiglottis.
8. The nervous system is always profoundly affected.

THE THERAPEUTICAL EFFECTS OF THE INTERNAL ADMINISTRATION OF HOT WATER IN THE TREATMENT OF NERVOUS DISEASES.*

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A MUTUAL dependence may often exist between disordered states of the thoracic, abdominal, and pelvic viscera and some forms of functional disturbance of the nervous system. This is well recognized to-day by all neurologists.

The fact has been demonstrated, by a long array of clinical observations and physiological experiments, that the nerve-centers are not to be considered clinically as independent organs. The brain and spinal cord are to a certain extent but servants of the other viscera. On the other hand, the nerve-centers are occasionally the masters. They perform some of the functions (properly attributed to them in one sense) only in response to different forms of impressions conveyed to them from without. By means of vaso-motor and other varieties of nerve-filaments, sensory impressions made upon peripheral organs are now known to affect the general blood-pressure; to accelerate and arrest the action of the heart; to induce spasmodic and paralytic disturbances in special physiological centers of the brain and spinal cord; to create localized phenomena of defective nutrition and assimilation; and to excite reflex nervous symptoms in parts far removed from the seat of peripheral irritation. We also know that the growth of the viscera, as well as their physiological functions, hangs upon a reciprocal relationship between them and the brain and spinal cord.

I mention these facts as a preface to my remarks this evening, because they will be shown to have a direct bearing upon a theory which I shall advance respecting the action of heat (when introduced into the stomach) upon the various organs and tissues.

The tendency of the age, particularly in neurology, seems to me to manifest itself in endeavors to discover new medicinal agents, often to the neglect of simple remedies whose influence upon the system has not yet been thoroughly tested. Among the latter, to my mind, hot water stands pre-eminently at the head.

It may seem a startling assertion, but it is nevertheless a fact, that more persons among the laity are to-day taking hot water for various ailments than any single drug in our pharmacopœia. In many instances they may be doing so injudiciously and without proper grounds; but that they are employing this agent, for actual or imaginary ills of the flesh, by thousands can not be denied by any one acquainted with the facts.

The spread of the belief in the therapeutical value of hot water has traveled chiefly by word of mouth, as I know of only two articles in medical literature that have materially helped to popularize it. To employ hot water therapeutically could not have become so universal a custom unless great benefit had been bestowed by it upon many. My own

experience with it in the treatment of nervous diseases has led me to call the attention of the profession again to its use as a therapeutical agent, and to point out some of the results that may be expected from it, and also how it should be administered.

In no work upon therapeutics or neurology have I been able to find any record of experiments made to determine either the physiological or therapeutical effects of hot-water drinking. In most of them no reference even is made to it as a remedy.

It was first employed in 1858, according to Dr. Cutter, by Dr. J. H. Salisbury, who made use of it in a series of experiments undertaken upon animals and men, with reference to the effects of food upon the animal economy as a cause and cure of disease. These experiments were commented upon by the London "Lancet" as a "valuable American contribution to medicine," according to Dr. Cutter, who gives no reference to the number of that journal.

In 1883 (June 18th) Dr. Ephraim Cutter published in "Gaillard's Medical Journal" a short article giving a summary of Dr. Salisbury's conclusions. The same article again appeared in the "Lancet" of September 15, 1883 (without any reference to its previous publication), although classed as an "original contribution" to that journal. Dr. Salisbury can perhaps lay just claim to originality. He tested this agent upon himself, selected subjects, and animals, and his experiments were presumably conducted upon an honest basis, and with scientific acumen.

I have never verified his experiments, because I have been unable to get a reply, either from him or from Dr. Cutter, to my written requests for a reference to the journal in which they were published originally, or in which they were reviewed. I have tested the accuracy of many of his conclusions, however (according to Dr. Cutter's statement of them), in a clinical way. I deem it therefore but justice to Dr. Salisbury, with whom I am personally unacquainted, to express here my indebtedness to the views which he was the first to advance. Not only have I communicated personally with Dr. Salisbury and Dr. Cutter, but our courteous librarian kindly offered to make diligent search for all articles upon this subject. Thus far, he has been unable to find any, and all efforts by both of us to ascertain the date and channel of publication of Dr. Salisbury's original experiments have been fruitless.

Heat has been employed as a therapeutical measure in various ways for centuries. As a hæmostatic, hot water has lately become indispensable to the surgeon, although the red-hot iron was employed by Galen, and is still used to check hæmorrhage from bleeding mucous surfaces. As an antiphlogistic, heat is a household remedy. Who of us has not employed it in fever, inflammatory conditions, and many of the nervous disturbances of childhood that accompany these conditions?

Different temperatures are known to have widely different therapeutical effects:

1. Moderate heat, when applied to living tissues, causes a determination of blood to the part, with dilatation of its blood-vessels and an increased rapidity of the blood current. As examples of this action, I might cite the effects of the

* A paper read before the New York Academy of Medicine, October 16, 1884.

poultice upon suppuration, of the hot hip-bath and vaginal douches upon the catamenial discharges, of the hot bath upon the skin, and many others.

2. A higher degree of temperature, on the other hand, tends to cause contraction of the blood-vessels and to diminish the amount of blood in the tissues; hence the action of very hot water as a hæmostatic.

3. Intense heat, as illustrated in the application of the actual cautery to the skin (so lightly even as to cause neither vesication nor pain), produces a very marked contraction in the blood-vessels of organs and tissues that lie adjacent to the part cauterized. It is believed to-day that this effect is produced through the agency of the vaso-motor system of nerves, and that the contraction of the blood-vessels is a direct result of the shock produced upon peripheral nerve-filaments by the intense heat employed.

We have clinical knowledge that the actual cautery will produce a return of the normal habit of sleep, after chronic cerebral hyperæmia has produced wakefulness for years, if employed at the upper part of the neck. It will relieve the symptoms of spinal congestion, as no other known remedy will. It will often produce secretion by the kidney if applied to the loins, when congestion of that organ has led to complete suppression of urine. It will arrest neuralgic pains immediately in many cases. Finally, it will apparently exert an alterative change in tissues when persistently applied. In many forms of nervous diseases, this method of employing heat is recognized as an important aid in treatment. The cautery apparatus is to-day one of the most valuable additions to the neurologist's outfit. It is almost indispensable in the treatment of nervous diseases.

The benefits that result from the internal use of hot water, to which I shall call attention, must be due, in part at least if not wholly, to heat. Some of its effects are manifested, almost immediately, in organs not connected directly with the digestive apparatus. I will suggest further on in this article a theoretical explanation of these effects, based upon anatomical data relating to the nervous system.

RULES FOR ADMINISTRATION.

Let me state first, however, the method which should be rigorously followed in taking hot water for its remedial effects.

1. The water may be taken in doses of from one goblet to one and a half. An ordinary goblet contains about ten ounces. The dose must be modified in accordance with its effects.

2. *It must be drunk hot, and not warm (110° to 150°).* If necessary, fifteen minutes or more may be consumed in sipping a gobletful. Wooden cups prevent the water from cooling quickly. The water may be flavored with lemon, sugar, salt, ginger, etc., if necessary,* but it becomes very agreeable to the palate without such after the patient has taken it for a short time.

3. The dose must be taken *one hour and a half before*

each meal with absolute punctuality, and one at bed-time. My patients have the first dose brought to their bed-side and consume it before rising. The passage of the fluid into the intestine, or its absorption before the meal, is insured by this rule. The quantity taken daily must be modified according to the effects produced.

4. *The temperature of the water should be increased as fast as the patients can bear it.* It is remarkable how high a degree of heat some patients can endure after taking hot water for months. At first, such a temperature would blister the mouth. Below 110°, the heat is not sufficient, as a rule, to have any therapeutical effects, save as an emetic.

5. The administration of hot water *must be continued for at least six months*, in order to get its full effects. It will be some weeks, as a rule, before any beneficial effects become markedly apparent. It is not sufficient for a test of its value that it be given at irregular intervals, with variable degrees of temperature, and with no regard for the specific gravity of the urine and the proportion of solid ingredients secreted by the kidney.

6. The dose should be determined largely by the specific gravity and general character of the urine. If it falls as low as 1·010, the dose should be reduced, if necessary, to one half a pint. If it reaches 1·030, the dose should be gradually increased to a pint, provided that the daily quantity of urine has not been decreased to a point below the normal standard by profuse sweating. The average urinary secretion of a healthy adult should vary between thirty-five and fifty ounces for twenty-four hours. It may occasionally reach two quarts. The object of the treatment should be to bring the specific gravity of the urine to the standard of health, 1·010–1·022, and to keep it there.

7. *The use of cold fluids*, in the form of beverages, must be absolutely prohibited. Many patients have told me, after following this treatment, that they will never from preference drink cold water again.

8. *A restricted diet* is often necessary to the full effects of the treatment, in some forms of nervous derangements. It is my custom with some patients to forbid all sweets, pastry, fresh bread in any form, and fats. In other instances I employ the meat diet exclusively, the fatty parts being removed before cooking. The sour wines are not usually forbidden, nor is tea or coffee, unless they are apparently injurious to the patient. The condition of the subject, in respect to flesh, is my guide, as a rule, to the character of the diet prescribed, provided that marked disturbances to digestion or diabetic symptoms are not to be combated. If the patient is ill-proportioned as regards adipose tissue, I aim to reduce the weight gradually to the normal standard. This is estimated on the basis of the height, sex, bony framework, etc. Cutting down the saccharine and starchy elements of food will effect this reduction in weight rapidly. If the subject is thin and poorly nourished, I adopt the opposite plan often with good results.

(To be concluded.)

* Cinnamon, clover tea blossoms, sage, aromatic spirits of ammonia, and sulphate of magnesium have also been suggested. I often introduce a teaspoonful of Carlsbad salts into the morning dose, to relieve constipation, when it is obstinate.

The Chair of Pathological Anatomy at Leipsic.—The "St. Petersburger medicinische Wochenschrift" learns that Dr. Robert Koch, of Berlin, has been called to the chair, made vacant by the death of Professor Cohnheim, but that he has declined the offer.

THE RELATION OF LARYNGEAL TO PULMONARY DISEASES.*

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THIS topic was one among the list of suggested subjects for papers to be read at our meeting, and, at the request of a member of the committee, I have prepared a brief *résumé* of the question from the point of view that there is very little practical connection between diseases of the larynx and diseases of the lungs. As to syphilis of the larynx, I believe it has never been maintained that there is any connection between it and pulmonary disease. A very large number of these cases come under my observation each year at my clinic, and I have never yet seen a single case in which any involvement of the deeper air-passages could be traced to the morbid condition in the larynx. Syphilitic disease of the lung I have never met with, but in the few cases reported there is not, so far as I recall, a single case in which the pulmonary affection was complicated by, or seemed to give rise to, any laryngeal outbreak of the disease.

The same also may be said of carcinoma, lupus, and scrofula. The whole question, then, narrows itself down to catarrhal laryngitis and tuberculosis of the larynx. Acute catarrhal laryngitis I regard as a symptom of chronic laryngitis; in other words, the course of the chronic affection is characterized by recurrent attacks of mild acute inflammation, which I think rarely if ever occur unless there is a previously existing chronic disease.

Chronic laryngitis has filled a very large page in the literature of throat affections. Thirty years ago Garcia published his successful attempt to examine the larynx by ocular inspection during life, and thus gave a name to, and inaugurated the new specialty of, laryngology, setting a fashion which we have followed to the present day of basing our diagnoses on the results of a laryngoscopic examination, and restricting our therapeutic measures to topical agents applied directly to the laryngeal mucous membrane.

What is chronic laryngitis? Previous to the introduction of the laryngoscope it was a very commonly made statement that chronic laryngitis was due to syphilis or tuberculosis. I have even seen this statement made quite recently. That this assertion is utterly without foundation I need scarcely state. Syphilis in the larynx gives rise to certain definite, distinctive, and unmistakable lesions, such as mucous patches, superficial ulceration, deep ulceration, etc.; but these lesions are in no sense of the word inflammatory in character. So, also, in regard to tubercular disease of the larynx. This is a specific morbid process, characterized by the development of certain changes in the laryngeal mucous membrane which lead to ulceration and destruction of tissue; but these changes, whatever else they may be, certainly do not constitute an inflammatory process.

Chronic laryngitis, then, is neither a syphilitic or a tubercular disease; it is a simple catarrhal inflammation of the mucous membrane lining the larynx. The larynx, as the apparatus by which the voice is produced, is an organ of

much importance in the economy. It is also of importance with regard to the function, which somewhat adventitiously belongs to it, by which the glottis is opened with each act of inspiration—the so-called respiratory function of the larynx. As constituting a portion of the respiratory tract which is liable to become the seat of a catarrhal inflammation, I think its importance has been much over-estimated, for it constitutes a comparatively small portion of the respiratory tract. The trachea is lined by a mucous membrane which, in superficial area, is from six to eight times greater than that of the larynx, and a catarrhal tracheitis I regard as of more serious import than a laryngitis, and as giving rise to symptoms of a more troublesome character, and yet tracheitis is rarely made a subject of clinical study. The symptoms of a catarrhal inflammation are hyperæmia, over-secretion, swelling, and, as the case may be, interference with function.

Hyperæmia in the larynx in itself does not give rise to any marked symptoms. Swelling or tumefaction is never present in a simple catarrhal laryngitis to an extent sufficient alone to cause other than some interference with phonation, or impairment of voice.

Over-secretion is one of the symptoms of laryngitis, and yet the laryngeal mucous membrane, even in a state of chronic inflammation, possesses but a limited capacity for over-secretion. In the nasal cavities we find a mucous membrane which is endowed with a peculiar and very numerous set of glands which pour out a most abundant sero-mucous supply. This is demanded in order that in each act of respiration the air which reaches the lungs may be so far charged with moisture that it shall not rob the mucous membrane of the larynx and lower air-passages of its moisture, and thus produce irritation. The point which I wish to emphasize is, that the air which reaches the larynx and lower passages must be saturated or so far charged with moisture that it will not take up any moisture from these parts. This moisture must be, and is normally, supplied by the nasal membrane. When we remember that we take breath about twenty-five thousand times daily, we can form a proper estimate of the amount of secretion which normally must be poured out by the nasal mucous membrane. In the larynx, on the other hand, the amount of normal secretion is small. All that nature demands here is that the mucous glands and follicles shall pour out upon the surface of the membrane sufficient mucus to keep it in a soft, moist, and pliable condition, and this demand is easily supplied. In a chronic inflammation this normal secretion is, to an extent, increased, perhaps, but this is limited, because the capacity for secretion is limited.

Again, in regard to the impairment of function. Nature has endowed us with organs capable of doing far more work than they are ordinarily called upon to perform. This is true of most organs of the body, and is true of the larynx. The great function of the larynx is in phonation, and yet, as a rule, the ordinary function of phonation is not interfered with by a simple chronic laryngitis. Probably a majority of those present to-day have chronic laryngitis, more or less well marked, and yet few of us are conscious of any marked impairment of function therefrom.

* Read before the American Climatological Association, May 5, 1884.

The singing voice calls into use the highest capacity of the larynx, and, therefore, demands that the laryngeal mucous membrane shall be absolutely in a condition of health, and hence, in the singer, a chronic laryngitis becomes a matter of serious import, but serious only to the voice. A chronic catarrhal laryngitis, then, in itself as a disease, is a comparatively trivial matter. I mean by this that, if we confine our attention entirely to the laryngeal membrane, we find that the symptoms which may arise from the morbid process are of slight importance. Furthermore, I think some light is thrown on the subject if we glance at the literature of its treatment. Pretty much all of the mineral and vegetable astringents in the Pharmacopœia have been recommended for its cure, in solutions of all grades of strength; and sprays, brushes, sponges, probangs, and other devices have been used for carrying these agents to the affected parts. In a standard work published within four years, I have even seen recommended the application of a saturated solution of nitrate of silver. This latter suggestion would certainly seem to indicate that all other measures were inefficacious, for one would scarcely dare resort to this treatment unless as the very last resort. I once saw a patient—a physician—in whose larynx a one-hundred-and-twenty-grain solution of nitrate of silver had been used, and his condemnation of it was most emphatic.

At a recent meeting of laryngologists I listened to a discussion on the treatment of catarrhal laryngitis, the only practical interest in which was the candor and unanimity with which the conclusion was reached of the inefficacy of local applications to the larynx in this affection.

Chronic catarrhal laryngitis, then, I believe to be really a symptom rather than a disease. It is one of the results and accompaniments of catarrhal inflammation of the nasal mucous membrane, rather than a morbid process commencing in the laryngeal cavity. Many of the prominent symptoms which are often referred to the larynx are really to be directly traced to the nasal disorder. Just how this occurs I need not describe at length. The prominent cause of the laryngeal catarrh is in the interference with nasal respiration. Any of the causes which give rise to nasal stenosis will, sooner or later, cause laryngitis by the habitual mouth-breathing to which it gives rise; the dry, cold, and impure air reaching the larynx soon causes irritation and morbid changes in the membrane. The excessive secretion, also, from the nasal chambers, making its way into the fauces, passes down into the larynx, and acts as an additional source of irritation, and is, I think, often the source of the expectorated mucus which is supposed to be secreted by the larynx.

The extension of a catarrhal inflammation from the nasal passages to the larynx by direct continuity of tissue has been regarded as a frequent occurrence; but the more I see of these cases the more I am disposed to think that this does not occur. The mucous membrane of the lower pharynx, through which the inflammatory process is supposed to extend, is not a part of the air-passages properly, but is rather a part of the food-tract. It is covered with pavement epithelium, the air-passages being lined with cylindrical epithelium, and presents a hard, resisting surface, designed to admit with impunity the passage of hard and

often rude masses, which would be most irritating to the air-passages. Moreover, if the pharyngeal membrane is examined carefully, I think you will agree with me in saying that chronic pharyngitis, as involving the lower pharynx, is a comparatively rare disease.

As the result of a nasal stenosis, then, with mouth-breathing, and of over-secretion from the nasal passage, a chronic laryngitis develops as a symptom merely, and rarely, if ever, as a primary disease. In former years, when I treated this affection as a primary affection and made local applications to the laryngeal cavity, I gave temporary relief, and no more. And in this, I think, my experience was that of most others.

In the past three years I do not recall a single case of chronic laryngitis which has not been cured. During this period I have entirely abandoned all local applications to the larynx, and have treated the nasal disorder which I have found to be present in every case. In other words, I never succeeded in curing a case of chronic laryngitis until I commenced the practice of letting the larynx absolutely alone. I do not mean to say that I have made no topical application to the larynx in this time. I have done so not infrequently, but only as a matter of temporary relief, and, perhaps, at the solicitation of the patient. Several of these cases have been those of professional singers whose voices were breaking down as the result of laryngeal catarrh. The restoration of voice in each case was complete. This, I think, is to be regarded as a perfect test of the completeness of the cure.

In many cases, then, and I certainly believe they are a very large majority, if not all, chronic laryngitis is a symptom rather than a disease, regarding a symptom as a diseased condition which is caused by some morbid process which has set in primarily elsewhere and is only remedied by treating its source or cause; while a disease is a morbid condition which affects the part primarily, and is remedied by directing measures to that part. If this, then, is the correct view, the effect of a chronic laryngitis upon the lung-tissue is but slight. A morbid condition of the lungs may possibly give rise to a mild laryngeal catarrh, but the latter disease is of so trivial a character, and is so completely masked by the more serious pulmonary disorder, that it can scarcely be said to complicate it. The cause of the laryngitis is to be found in the constant and abnormal irritation which is kept up in the larynx by the cough which accompanies the lung disorder. That the constant bathing of the laryngeal membrane by the more or less offensive discharge from the lung is a source of laryngeal disease, as stated by Louis, is very questionable. The answer, then, to the question of the relation between catarrhal laryngitis and pulmonary disease, I think, may be given with some positiveness. The relation is but very slight.

There is but one other question to which reference has been made, and that is concerning tubercular disease of the larynx. About 30 per cent. of cases of phthisis pulmonalis have been found, on post-mortem examination, to have been tubercular disease of the larynx. On the other hand, no single case of laryngeal tuberculosis has ever yet been described in which, on examination, the lungs did not present evidence

of the same morbid process; and yet, it seems to me, there can be no question that the disease may occur primarily in the larynx and subsequently develop in the lung. This possibility has been questioned, many observers whose names carry much weight of authority insisting that the primary tuberculosis was in the lungs, and that, when the laryngeal disease developed, the lung disease was masked by it; or possibly that the tubercular process, while present in the lungs, was not recognizable by physical signs. It has always seemed to me that the question of the possibility of a primary laryngeal tuberculosis was an unnecessary one. There are few tissues or organs of the body in which tubercular disease may not occur, and, so far as I know, this possibility has never been questioned. When we come to the larynx, however, commended by Virchow to those "who wish to know true tubercle," the possibility of its primary development here is questioned. The mere fact of its presence at any time in the larynx is sufficient answer to the question. When it does develop in the larynx, it is as a new center of development, and not by extension by continuity of tissue. It would seem, then, to be utterly illogical to state that the larynx, of all the organs of the body, is exempt from a primary deposit of tubercle. What, then, is the influence of this primary laryngeal tuberculosis on the lungs? Sooner or later there will develop pulmonary phthisis. In all medical literature there is no case in which this has not occurred. That it stands in the direct relation of cause and effect can not be said, for undoubtedly, in every case, behind them both stands the constitutional condition which invites the disease; but that the laryngeal disease is a most active, exciting cause of the pulmonary phthisis can not be questioned.

As regards the influence of pulmonary phthisis in causing a laryngeal phthisis, not much can be added to what I have already said. Certainly by far the most active and most frequent appreciable cause of laryngeal phthisis is pulmonary phthisis. If there are any other active, direct causes of the disease, their connection is most difficult to trace. Do the constant cough, purulent discharge, etc., of the pulmonary disease act notably to produce the laryngeal disease? When we consider the large number of larynxes which are subjected to these deleterious influences, and the small percentage which develop tuberculosis, I think we are bound to conclude that their bad influence has been overestimated.

CASE OF BRAIN DISEASE (PROBABLY SYPHILITIC), WITH AUTOPSY.*

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M. H., aged sixteen years, single, was committed to the Reformatory Prison for Women, June 2, 1883, for lewd and disorderly conduct. She was a slight, delicate, imperfectly developed, and very nervous girl. Her father was a confirmed inebriate; her mother was healthy, and of good habits.

About December 1st the patient lost appetite, and her pallor and nervousness increased. She did not complain, and contin-

ued in the discharge of light duties until January 24th, when, upon meeting her in one of the corridors, I noticed something so startling in her appearance (an unusual pallor, with great brilliancy of the eyes) that I immediately ordered her to the hospital. She was examined at 7.30 o'clock p. m.

The pulse was 120, wiry; temperature 102° F.; respiration 28 a minute; tongue lightly furred, and very pointed when protruded; bowels constipated; appetite poor. She complained of a dull pain in the left temple. The right pupil was somewhat larger than the left, both being moderately dilated. There was dullness on percussion, and bronchial respiration over the upper portion of the right lung. I was unable to elicit any history of syphilitic infection, or to discover any of the characteristic lesions of that disease. Menstruation had not occurred for five months.

During the early part of the examination she showed no embarrassment in answering the questions which were put to her, but soon I noticed that she appeared to hesitate, seeming unable to command the words which would express her ideas. Suddenly she became much bewildered, used words which conveyed no meaning, hesitated, finally became hopelessly involved, repeated "ah" or "why" a great many times, then sat silent, looking dazed and troubled. With each fresh question she would renew her efforts, with the results above noted. (Afterward I learned by careful inquiry that for several days she had been subject to less marked attacks of bewilderment and inability to express herself in words, but the matron in charge of her had sent her to rest and recover herself, not thinking that the condition was serious.)

January 25th.—At three o'clock a. m., the patient was awakened from sleep by a sudden and severe attack of vomiting. A large quantity of thin greenish fluid was evacuated. Subsequently the administration of a cathartic was followed by free movements of the bowels.

During the day she was weak and languid, but could reply to questions without embarrassment.

Evening.—Temperature 100° F., pulse 118, thin and hard; respiration 24.

26th.—At three o'clock a. m., vomiting occurred as upon the previous night. Severe localized pain in the left temple was now complained of. Temperature 102° F., pulse 110, extremities cold. Ung. belladonna. et hydrarg. was applied over the seat of pain, also an ice-cap. Heat applied to the extremities.

The history of the next few days showed no improvement. All efforts to control the terrible pain in the left temple were futile, or only temporary in their effects. The patient was very restless, moaned almost constantly, and suffered from extreme nausea, being able to retain but little food or medicine upon her stomach. The urine was scanty and high-colored, the specific gravity being 1.024, and the reaction acid. A slight deposit of urates was obtained, also sugar in small quantity.

Iodide of potassium was ordered in doses of from one to eight grammes, as borne; also, inunctions of oleate of mercury as the basis of the treatment.

February 4th.—Small excavated ulcers on the side of the tongue were found.

The pain in the left temple continued with varying intensity. Temperature 102° F., pulse 115. Projectile vomiting without nausea.

6th.—Temperature 101° F., pulse 90. Head symptoms no better. Pain at the left temple paroxysmal, causing the patient to cry out sharply. There was also pain over the entire frontal region and at the vertex. The teeth were covered with sordes; the tongue was protruded with difficulty, and was thickly covered with white fur. Food was retained by the stomach, the bowels were constipated, the abdomen was retracted. A good deal of

* Read before the Brooklyn Pathological Society, September 25, 1884.

pain in the bowels was complained of, but there was no tenderness upon pressure. The urine continued to be scanty and high-colored, containing traces of sugar. The patient complained of feeling chilly, and again hot at short intervals.

10th.—Temperature 103.5°, pulse 98. There was a dry, brown stripe in the center of the tongue. Nausea extreme.

11th.—Temperature 102.1°, pulse 100, somewhat irregular. A sticky, sanguineous secretion covered the lips and teeth, also the sides of the tongue. (The center of the tongue was still brown and dry.)

Evening.—The patient was dull and stupid, seemed to be sleeping, but when disturbed would insist that she had not slept. Anorexia was complete, and all substances were immediately rejected by the stomach. Food and medicine were administered by the rectum.

14th.—The patient had continued in a semi-comatose condition, but was conscious when aroused; slight rigidity of the muscles of the left side was noticed. Temperature 102.9°, pulse 130, weak. When the patient was placed in the dorsal position the respiration became very irregular, quick, and stertorous for four or five breaths, followed by an interval of from ten to twenty-five seconds, then a few short, shallow breaths, then stertorous again. When she was changed from this position the breathing became regular.

15th.—Temperature 103.8°, pulse 130; coma slowly deepening; face cyanotic. When aroused, she recognized those about her, but spoke indistinctly.

The pupils responded feebly to light; both were dilated, the right larger than the left.

16th.—Temperature 102°, pulse irregular, thready, 132. The skin was dry and the face pale. When loudly spoken to she would respond feebly but understandingly, then almost immediately relapse into unconsciousness.

Large, thin fecal stools passed involuntarily.

17th.—Temperature 102.9°, pulse 124–132, coma complete. The pupils were widely dilated, the iris presenting a mere line at its outer margin in the left and its inner margin in the right eye.

At twelve o'clock (noon) a decided convulsion, the first and only one, occurred, clonic in character but of short duration. Extreme cyanosis of the face followed this. Slight twitching of the muscles of the face and of the left hand occurred at intervals. The diarrhoea continued.

18th.—At 3 a. m. the breathing became markedly stertorous and irregular. Slight paralysis of the facial muscles of the left side was observed for the first time.

At 10 a. m. the tongue was swollen, the left half being half dry, the right half moist; mouth slightly drawn toward the right side; face cyanotic. The respiration was very irregular, varying from four to seventy-two a minute. Pulse 170.

At 11 p. m. the temperature rose to 106.2°. Death occurred at midnight.

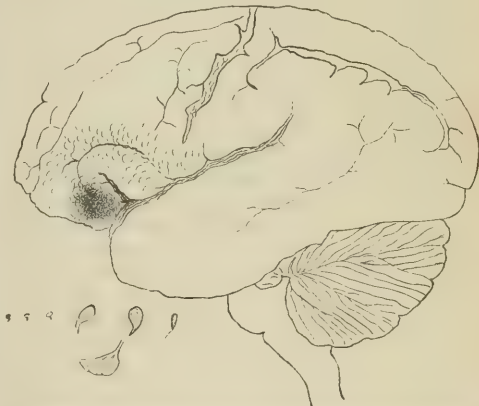
In my absence the autopsy was made by my colleague, Dr. Eliza M. Mosher, assisted by Dr. L. M. Palmer, of South Framingham. Dr. Walter Channing, of Boston, was also present at the special examination of the brain.

Autopsy, nine hours after death: Rigor mortis well marked; body well nourished; skin of unusual bluish tint. Post-mortem congestion of most dependent parts. Abdomen, pelvis, and brain examined. Nothing of especial interest was found in two first cavities.

Brain.—The scalp contained an abnormal quantity of blood in its vessels. Skull of medium thickness. Dura mater strongly adherent to inner table of skull over left half anteriorly, somewhat thickened, and easily separable into two layers over both anterior cerebral lobes, but most marked on left side. Sinuses

filled to repletion with dark blood of syrupy consistence. Surface of dura mater along the line of the longitudinal sinus thickly studded with tallow-like bodies, from the size of a millet-seed to that of a grain of wheat, attached to the dura mater by a short pedicle.

Pia mater slightly opaque (milky in appearance), markedly so over the left lobe anteriorly and over the median portion of the convex surface of the cerebellum. Its contiguous surfaces were strongly adherent along the margin of the fissure of Sylvius (left), binding together the anterior and middle lobes. The vessels were greatly congested over the entire convexity of the hemispheres, the capillaries presenting everywhere an unusually beautiful arborescent appearance. The vessels of the left side, in the region of the third frontal convolution, were especially large, the middle cerebral vein of the left side being distended to nearly twice the size of its fellow. Tallow-like bodies, similar to those found along the longitudinal sinus, appeared in great numbers in this region as well as on the lines of the larger vessels of the convexity beneath the pia mater, and more or less imbedded in it. Upon the left side some of these growths had attained to the size of a large pea, and, upon section, were found to be much softer than the smaller ones, their contents being of the consistence of thick cream. Whether these were morbid growths, or Pacchionian bodies which had taken on morbid action, we were unable to decide.



The growths described were like the small figures in size and shape, always lying along the lines of the vessels.

Upon lifting the brain, a quantity of serum, apparently about six c. c., was observed free in the basal region. The structure of the posterior and middle lobes appeared healthy at the base, but gradually presented an unusually firm consistence as the vertex was approached. The entire anterior lobes were less firm than in the healthy brain.

The bases of the second and third convolutions upon the left side were so soft that the handle of the scalpel, laid lightly upon them, penetrated the brain substance.

Section of the left anterior cerebral lobe showed a partially absorbed hæmorrhagic infarction of the third, or Broca's, convolution, occupying about one half of its extent. (Shown in the diagram.)

The process of softening had extended forward through the second to the margin of the first convolution, and upward, encroaching upon the lower portions of the fourth and fifth convolutions.

On transverse section, marked congestion of the vessels was

everywhere noticeable. The ventricles contained a small quantity of serum.

Weight of the brain, 1,560 grammes.

That this was a case of early implication of the brain from syphilis is probable.

The cessation of the menses, so often occurring in nervous young women during the earlier stages of syphilis, the insidious and painless progress of the disease up to the time of her removal to the hospital, the *embarras de parole*, the retention of consciousness during the entire course of the illness—all point to syphilis as the cause, as do also the anatomical lesions, viz., the sores in the mouth found ante mortem, and the brain softening, the growths and other evidences of morbid processes, found post mortem.

The degeneration of the arteries from syphilitic new formations is forcibly described by Heubner ("Von Ziemssen's Cyclopædia," pp. 309–311, vol. xii). He also adds that "this degeneration most frequently affects the carotids and their branches, the arteries of the *fossa Sylvii*, and of the corpus callosum."

Upon page 308 he speaks of rare cases where the syphilitic growths make their appearance in the form of numerous miliary nodules upon the dura mater and in the soft membranes. "Engelstedt describes one such case, as well as Leon Gros and Lancereaux."

The almost entire absence of external lesions is not a rare condition in these cases. Engelstedt states that in twenty cases out of forty-one he found the syphilitic nervous disease the only symptom.

Brain affections at so early a stage of the disease as in this case is probable are somewhat rare. Heubner states that "these rapidly progressive cases are just the ones which generally occur at an unusually early period of the syphilitic disease, three of eleven cases of this character occurring during the first year after infection." Also that "hereditary predisposition to nervous diseases . . . undoubtedly plays an important part." Also, "It is highly probable that an organism whose nervous system is already by inheritance in a condition of unstable equilibrium may be affected by nerve syphilis, both easily and at perhaps an early period, when subjected to infection."

Book Notices.

Atlas of Female Pelvic Anatomy. By D. BERRY HART, M. D., F. R. C. P. E., Lecturer on Midwifery, School of Medicine, Edinburgh; Author of "Manual of Gynecology" (with Dr. Barbour), "Structural Anatomy," etc. New York: D. Appleton & Co., 1884. 4to, pp. 89–iv, 87 plates. [Price, \$15.]

The recognized value of Dr. Hart's lesser contributions to the topographical anatomy of the pelvis and its contents in women will doubtless lead his many readers in this country to a careful study of this, his most elaborate work in that department of gynecology. Since Savage's well-known work appeared, a number of additions have been made to our knowledge of the subject, in Germany, in Great Britain, and in this

country. Of all these Dr. Hart has availed himself to the utmost, not as a mere compiler, but in a spirit of legitimate criticism. He has tested his own observations by those of others, and *vice versa*, and the result is that speculation and crudity have been well nigh eliminated. That there was need of earnest work being done in this department, the glaring inaccuracy of many of the figures in most of the text-books, even at the present time, abundantly shows; and that the labor of detecting their fallacies has been arduous will be appreciated by any one who has ever attempted the task. Such a work as this, therefore, is of a nature to entitle its author to the gratitude of the profession.

There is still much that is doubtful in pelvic anatomy, particularly with regard to topography. In his treatment of those doubtful points Dr. Hart's moderation and freedom from the bias of preconceived theory are no less conspicuous than his intelligence. Indeed, throughout the book, nothing is set down as fact unless it seems to rest on a foundation too substantial for dispute. But the work is not a mere array of facts; it embodies a clear conception of what may be called the philosophy of the pelvic structures, so far as our present knowledge admits of such a conception, and, furthermore, it lays that conception before the reader tersely, intelligibly, and convincingly. It is not trivial niceties that the work deals with, but matters that are growing more and more to mold the gynecological practice of the day, and must continue to do so. Side by side with the statement of a fact we find its practical application, and the whole contents form such a natural sequence that a study of the work is well calculated to impart a real knowledge of the subject rather than a mere impression of a detached catalogue of facts.

Concerning the plates nothing but praise can be spoken; they are simply faultless in their mechanical execution. The typography is excellent, and the paper of the best. A short preface by Dr. Skene introduces the book to the American profession.

BOOKS AND PAMPHLETS RECEIVED.

On Sclerosis of the Spinal Cord: including Locomotor Ataxy, Spastic Spinal Paralysis, and Other System-Diseases of the Spinal Cord; their Pathology, Symptoms, Diagnosis, and Treatment. By Julius Althaus, M. D., M. R. C. P., Senior Physician to the Hospital for Epilepsy and Paralysis, Regent's Park, etc. With Nine Engravings. New York: G. P. Putnam's Sons, 1885. Pp. xii–394.

The Elements of Pathology. By Edward Rindfleisch, M. D., Professor of Pathological Anatomy in the University of Würzburg. Translated from the First German Edition by William H. Mercur, M. D. Revised by James Tyson, M. D., Professor of General Pathology and Morbid Anatomy in the University of Pennsylvania, etc. Philadelphia: P. Blakiston, Son & Co., 1884. Pp. 283. [Price, \$2.]

Surgical Delusions and Follies. A Revision of the Address in Surgery for 1884 of the Medical Society of the State of Pennsylvania. By John B. Roberts, M. D., Professor of Anatomy and Surgery in the Philadelphia Polyclinic, etc. Philadelphia: P. Blakiston, Son & Co., 1884. Pp. 55.

Lectures delivered at the Royal College of Surgeons of England, on some Important Points connected with the Surgery of the Urinary Organs. By Sir Henry Thompson, F. R. C. S., M. B. Lond., Surgeon Extraordinary to H. M. the King of the Belgians, etc. London: J. & A. Churchill, 1884. Pp. 147. [Students' Edition.]

Quarterly Report of Medical Officers, United States Army, with their Stations and Duties, as reported to the Surgeon-General October 1, 1884.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.

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Edited by
FRANK P. FOSTER, M. D.

NEW YORK, SATURDAY, OCTOBER 18, 1884.

MEDICAL STUDY ABROAD FROM A MORAL STANDPOINT.

It is not our purpose to deliver a lecture upon ethics, but simply to make a few suggestions founded upon certain facts that are within our knowledge. It is undeniable that a strong impetus has been given to foreign medical study among our countrymen, both by the words and the writings of those who have enjoyed that advantage for themselves, and by the general and deeply felt need of a broader and more thorough training on the part of American practitioners. The details of the educational facilities to be had in Europe were ably set forth by the author of the article on the subject that appeared in our Students' Number, so that nothing further need be said as to the methods of study and the most favorable localities for special work. It may safely be assumed that the American medical graduate now goes abroad with a clear knowledge of the best ways and means of employing his time—a legacy bequeathed to him by his less fortunate predecessors.

There is one point, however, which has received little or no consideration, although it is so important that no excuse is needed for urging it upon the earnest consideration of the young physician. In times past a man could expect to make capital out of the simple fact that he had "studied abroad," but the glamour of the thing has worn off, and the laity as well as the profession now demand proof, not merely of time spent in study, but of time *well* spent. Real and not hypothetical results are the only ones accepted. Therefore, when a man returns with the supposed additional finish to his education, it is right that society should ask of him, and above all that he should ask himself, whether there has not been something lost as well as something gained.

The motives with which medical men go abroad are as various as the men themselves. A few have a clear idea of what they wish to do, and they do it. That they are in the minority, every thoughtful observer will acknowledge. It is noticeable that such men are generally heard from again. Others leave home with the laudable, although mistaken, ambition to cover the whole field of medicine in their study. The third class, and the largest one, comprises those who have no definite idea of just what they wish to undertake; in fact, they are somewhat in the position of the irreverent theological student who, having been asked what he intended to do, is reported to have answered, "Damfino." It is to the latter class especially that our present remarks are directed.

Each one of us can call to mind some man who was spoiled by going to college, who would have made a far more useful member of society had he remained on the farm or in the workshop, and not sought to improve upon the status handed down to him. We have no hesitation in asserting that many a medi-

cal student who would have made a steady and honorable member of his profession, had he entered upon its duties at once on leaving his college or hospital, has been spoiled by his residence abroad, where he has broadened his professional knowledge, but suffered an irreparable loss in moral tone, in delicacy of feeling, and in tenderness toward the suffering. This is no cant—it is simply an every-day experience. It is unnecessary to urge the trite remark that an educated physician is something more than a cyclopædia of facts or an infallible diagnostician—that he is, or should be, an honorable gentleman, and that, too, not for utilitarian reasons merely, but because it is *in him*. The thin varnish of Continental *politesse* or indifference is not suited to our society; it is decidedly out of place, and the young man who acquires it abroad must simply unlearn it on his return.

Assuming, then, that a liberal professional education is not enough in itself to secure success (to urge no higher motive), it may be asked with some pertinence whether other and more delicate qualities are likely to be cultivated abroad. We have no hesitation in answering this question in the negative. Indeed, the man who starts with the instincts of a gentleman must be on his guard lest he lose what delicacy he has. With those who have never been particularly troubled with delicate feelings, the result may readily be inferred. The "free and easy" moral atmosphere of the great Continental capitals, notably Vienna; the light regard in which woman is held; the perfect subjection in which patients are kept; and the cold-blooded way in which those patients are treated—all of these are dangerous elements in the question of foreign medical education. Add to them the entire irresponsibility of young men in Vienna, even to society, which exercises some restraint at home, and it will be acknowledged that he must be an individual of strong character and absolute devotion to a high ideal who returns home as clean a man as when he went. Again, methods of examining and treating patients are learned which it would be positive professional suicide for a man to practice at home. Whatever degree of tenderness and consideration he may have acquired is lost, and, when he begins private practice in his own country, he finds that he must go back and reacquire his former tact and suavity. This is the objection to German gynecology, for example, especially when the student has never studied that branch in any other school.

Enough has been said to lead the reader to admit the possibility that there are two sides to the popular question of foreign study. Far be it from us to cast any reflection upon the value of the intellectual training which may be acquired. Our only object is to show, and that without any intention of writing *ex cathedra*, that many men would serve their day and generation better by not going abroad to study, and that those who do go need to exercise some caution lest they return home not broad and earnest physicians, but soulless "scientists."

THE FIFTH VOLUME OF THE INDEX-CATALOGUE.

It is most gratifying to be called upon so soon to chronicle the appearance of a new volume of this gigantic work. If its

indefatigable director had nothing else on his hands, the rapidity with which it is pushed forward could not fail to excite the admiration of all those who have the slightest conception of the difficulty of the task. But Dr. Billings's activity, as everybody is well aware who keeps the run of what is going on in the profession, is constantly displayed in many undertakings that have nothing to do with the preparation of these volumes. Taking this fact into consideration, and especially the enormous labors upon which he must by this time have entered in connection with the organization of the next International Medical Congress, the steady progress made in the work of completing the Index-Catalogue—and that, too, without any deterioration in its quality, so far as we have been able to observe—can only be regarded as marvelous. Whatever may be the amount of assistance, advisory or clerical, at Dr. Billings's command, at least the direction of the work must fall upon him continually, and even a labor of love may become a severe tax upon one's endurance. Yet, we think it would not be over-estimating the appreciation with which the profession look upon the work to declare it ample to sustain and encourage a man even under such a mountain of toil. It is doubtless to this circumstance in no small measure that we owe it that the author of the catalogue has not lost heart before now, and we believe that the same sustaining element will enable him to persevere to the end.

The fifth volume carries the vocabulary from *Flaccus* to *Hearth*. It contains 15,555 author-titles, referring to 5,755 volumes and 12,596 pamphlets, and 42,196 subject-titles referring to books and journals. The number of pages is 1,055. Probably not more than one third of the work, and very likely less than that, has now been completed; but, when we remember that the first volume did not appear until the year 1880, the hope seems fairly warranted that the task may be finished during the next decade. It will then stand as an enduring monument of what devotion can accomplish when associated with such an enlightened policy as the Government has pursued in this instance.

MINOR PARAGRAPHS.

A NEW ENGLISH MONTHLY JOURNAL.

The first number of the "Medical Chronicle," published in Manchester, has reached us, and it is a pleasure to say that both its contents and its general appearance are admirable. Not long ago we informed our readers that the publication of the "Chronicle" had been announced, and we then gave a list of the distinguished gentlemen under whose management it was to be issued. The initial number is in the form of a large octavo, of one hundred and twenty pages, and contains the following original contributions: "On Tests for Albumin in the Urine—New and Old," by Dr. William Roberts; "The Pathology of the Lung Complications in Diabetes," by Dr. Julius Dreschfeld; "The Treatment of Dupuytren's Contraction of the Fingers," by Mr. James Hardie; "Surgical Drainage: a New Method of Subcutaneous Drainage and Irrigation," by Mr. George J. Robertson; and "Some Fatal Cases of Icterus Neonatorum," by Dr. Henry Ashby. In addition, there are classified abstracts of a very creditable character.

NEWS ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending October 14, 1884:

DISEASES.	Week ending Oct. 7.		Week ending Oct. 14.	
	Cases.	Deaths.	Cases.	Deaths.
Typhus.....	1	1	0	0
Typhoid Fever.....	48	12	42	13
Scarlet Fever.....	36	3	39	5
Cerebro-spinal meningitis....	2	3	2	2
Measles.....	19	5	6	6
Diphtheria.....	40	19	45	29
Small-pox.....	0	0	1	0

The American Academy of Medicine will hold its ninth annual meeting in Baltimore, at the Hopkins Hall of the Johns Hopkins University, on Tuesday and Wednesday, October 28th and 29th. Papers are announced as follows: The Relation of the Medical Colleges to Preliminary Education, by Dr. Peter D. Keyser, of Philadelphia; The Examination of Applicants for License to Practice, a Means of raising the Standard of Medical Education, by Dr. Edward Jackson, of Philadelphia; The Role of Bacteria in Infectious Diseases, by Dr. Henry O. Marcy, of Boston; The Trade Aspect of Medicine, by Dr. Albert H. Gibson, of the navy; The Induction Coil, its Varieties and the Differential Indications for their Use, by Dr. A. D. Rockwell, of New York; Differentiation the Test of Civilization: the Specialist and his Education (the President's Address), by Dr. Benjamin Lee, of Philadelphia; The Teachings derived from Observations in 137 Abdominal Sections, by Dr. R. Stansbury Sutton, of Pittsburgh, Pa.; Some Comparative Results of Treatment of Chronic Articular Osteitis of the Hip, by Dr. Virgil P. Gibney, of New York; The Place of the Physician in Literature, by Dr. Charles C. Bombaugh, of Baltimore; The Aim in Treatment of Angular Curvature of the Spine, by Dr. T. M. Ludlow Chrystie, of New York; Physiology in its More Public Relations, by Dr. Nathan Allen, of Lowell, Mass.; Statistics of Glaucoma, by Dr. H. Knapp, of New York; Specialties and their Relation to the Medical Profession, by Dr. L. Duncan Bulkley, of New York; Report on Laws regulating the Practice of Medicine in the United States and Canada, by Dr. R. J. Dunglison, of Philadelphia, and Dr. Henry O. Marcy, of Boston.

The Reception to Dr. W. S. Playfair, of London, given by Dr. Emmet, on Friday evening, the 26th of last month, is memorable on more than one account. In the first place, more representative men were gathered together from the profession in New York and the vicinity than are often to be seen, and, in the next place, the gathering was more truly of the best men in our ranks than is often met with. This is to be accounted for partly by reason of Dr. Emmet's ample accommodations, but chiefly, we are persuaded, on account of the spontaneous feeling of fellowship with a man who, like Dr. Playfair, has had the courage and the honesty to uphold the actual basis of facts upon which certain prominent features of American gynecology are based. At all events, the occasion was a memorable one, and seemed to be of the sort that ought to cement together with added force the two races that are of one blood.

Photographing the Larynx.—We have been shown a number of the photographs of the larynx that were exhibited in the Section of Laryngology at the Copenhagen meeting of the International Medical Congress, by Dr. Thomas R. French, of Brooklyn. From the striking clearness of these pictures, taken in connection with the fact that the process is applicable in the

cases of untrained patients, it must be said that Dr. French has made a distinct advance in the demonstration and recording of laryngeal difficulties.

The Alleged Maltreatment of Lunatics in Canada has been made the subject of a published report by Dr. D. Mack Tuke, special reference being had to the Province of Quebec. It is said that a Government inquiry will be instituted in consequence.

"Happy Thoughts" seems to have been the model after which the "Medical Times and Gazette" fashioned the first of a series of "Skeleton Introductory Addresses," and the writer imitates Mr. Burnand's style right cleverly.

The next International Congress of Otolology, according to our French exchanges, will be held at Brussels, in 1888.

The State Idiot Asylum at Syracuse.—We learn that Dr. James C. Carson, of the Institution for the Deaf and Dumb, in this city, has been appointed superintendent of the asylum.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from October 5, 1884, to October 11, 1884:*

CLEMENTS, B. A., Major and Surgeon. In addition to present duties, to take charge of the office of the Medical Director of the Department during the temporary absence of that officer. Par. 1, S. O. 195, Department of the Missouri, September 29, 1884.

HAPPERSETT, JOHN C. G., Major and Surgeon. Will be relieved from duty in the Department of the East, and ordered for duty at Willet's Point, New York.

WOODEUFF, EZRA, Captain and Assistant Surgeon. Granted leave of absence for four months. S. O. 235, A. G. O., October 7, 1884.

CRONKHIRE, HENRY M., Captain and Assistant Surgeon. Assigned to duty as Post Surgeon, Fort Reno, Indian Territory. S. O. 197, Department of the Missouri, October 2, 1884.

LORENG, LEONARD Y., Captain and Assistant Surgeon. From Department of the East to Department of California.

HAEVEY, PHILIP F., Captain and Assistant Surgeon. From Department of Dakota to duty in Attending Surgeon's office, Washington, D. C., relieving Robert W. Shufeldt, Captain and Assistant Surgeon, who, on being relieved, will report to commanding general, Department of the Missouri, for duty. S. O. 237, A. G. O., October 9, 1884.

POWELL, J. L., Captain and Assistant Surgeon. Granted leave of absence for one month on surgeon's certificate of disability.

SPENCER, WILLIAM G., Captain and Assistant Surgeon. Granted leave of absence for one month. S. O. 204, Headquarters Department of the East, October 8, 1884.

MC CREERY GEORGE, First Lieutenant and Assistant Surgeon. Assigned to duty at Fort Meade, Dakota Territory. S. O. 115, Headquarters Department of Dakota, October 6, 1884.

TAYLOR, A. W., First Lieutenant and Assistant Surgeon. Assigned to duty at Fort Omaha, Neb. Par. 3, S. O. 87, Headquarters Department of the Platte, October 3, 1884.

BLACK, C. S., First Lieutenant and Assistant Surgeon. Granted leave of absence for fifteen days, to take effect this date. Par. 3, S. O. 131, Department of Texas, September 29, 1884.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending October 11, 1884:*

LIPPINCOTT, G. C., Passed Assistant Surgeon. Granted sick leave, October 4, 1884.

WHITING, ROBERT, Passed Assistant Surgeon. Ordered to the Naval Hospital, New York, October 6, 1884.

BROWN, S. A., Passed Assistant Surgeon. Resignation accepted, October 7, 1884.

BRUSH, GEORGE R., Surgeon. Detached from the Vandalia and placed on waiting orders, October 8, 1884.

CRAIG, THOMAS C., Passed Assistant Surgeon. Detached from the Vandalia and placed on waiting orders, October 8, 1884.

AYRES, JOSEPH G. Leave of absence for one month, October 10, 1884.

OBERLY, A. S., Surgeon. Ordered to the Naval Hospital, Portsmouth, N. H., October 10, 1884.

CLEBORNE, C. J., Medical Inspector. Detached from duty at Portsmouth, N. H., and placed on waiting orders, October 10, 1884.

STEELE, JOHN W., Passed Assistant Surgeon. Detached from the Brooklyn and placed on waiting orders, October 10, 1884.

BOYD, JOHN C., Passed Assistant Surgeon. Assigned to duty at Navy Yard, Washington, D. C., October 10, 1884.

A Medical Centenarian.—It is said that Dr. C. C. Graham, of Louisville, completed the age of one hundred years on the 10th inst.

Society Meetings for the Coming Week:

MONDAY, *October 20th:* New York County Medical Association; Medico-Chirurgical Society of German Physicians; Roman Medical Society (private).

TUESDAY, *October 21st:* New York Academy of Medicine (Section in Theory and Practice of Medicine); Medical Societies of the Counties of Kings and Westchester, N. Y., and Hunterdon, N. J.; New York Obstetrical Society (private); Ogdensburg, N. Y., Medical Association.

WEDNESDAY, *October 22d:* American Association for the Cure of Inebriates (New York); New York Pathological Society; American Microscopical Society of the City of New York.

THURSDAY, *October 23d:* New York Academy of Medicine (Section in Obstetrics and Diseases of Women and Children); Harlem Medical Association of the City of New York.

FRIDAY, *October 24th:* New York Clinical Society (private); New York Society of German Physicians (private); Yorkville Medical Association (private).

SATURDAY, *October 25th:* New York Medical and Surgical Society (private).

Proceedings of Societies.

BROOKLYN PATHOLOGICAL SOCIETY.

Meeting of September 25, 1884.

The President, Dr. B. F. WESTBROOK, in the chair;
Dr. A. H. P. LEUF, Secretary.

Cystic Tumor of the Uterus; Rupture of a Cyst; Death from Shock.—Dr. GEORGE D. HOLSTON read the following:

The tumor which I present was taken from a patient who died last March, aged forty-two years. Her clinical history, briefly stated, is as follows: In 1868 she had a violent flooding, and an examination revealed a fibroid tumor connected with the uterus. In 1869 she had a severe inflammation of the bowels, which inflammation also seemed to involve the tissues around the tumor. She convalesced from this, so that she was able to move about, and went South. Subcutaneous injections of ergot were given for a period extending over several years, without any satisfactory result. For many years she menstruated regu-

larly, sometimes losing considerable blood. In the autumn of 1882 she had a profuse hemorrhage, and an examination at that time revealed a polypus hanging through the os. In the autumn and winter of 1883 her general health was remarkably good. On the day of her death, after walking up a flight of stairs, she was suddenly seized with a severe pain over the region of the tumor, and a few minutes after expired. She had never had any children, or any miscarriages.

Autopsy, held two days after death.—The head was not opened. The thorax presented a marked bulging on the right side, the left side being flattened. On opening the abdomen, a considerable quantity of grayish purulent fluid was found. The heart, lungs, liver, kidneys, and spleen appeared anæmic; otherwise nothing abnormal was observed in them. A large tumor occupied the right iliac region, extending across to the left and upward, and causing considerable displacement of the abdominal viscera. The tumor was firmly bound to the walls of the abdomen and to the intestines by strong adhesions. Of the uterus, nothing but the cervix could be discovered, with a polypus protruding through it. The tumors, uterus, bladder, and rectum were removed together, and weighed eleven pounds. On cutting into the mass, it was found that several of the tumors had undergone cystic degeneration. A perforation was found in the thin wall of one of the cysts, which had permitted of the discharge of its contents into the peritoneal cavity.

The cause of the patient's death was shock. The exertion which she made had ruptured one of the cysts, the contents of which discharged into the peritoneal cavity.

Subperitoneal Uterine Fibro-cystic Tumor; Rupture of a Cyst; Death from Shock.—Dr. DAVID MYERLE read the following:

Through the courtesy of Dr. Cornelius Olcott, I present a specimen of pelvic tumor with the following history:

Mrs. B., aged twenty-six, married eight years; had always had good health prior to March last, when for the first time her menses ceased. During the succeeding months she had other presumptive evidences of pregnancy, with no unusual distress until the middle of June, when a neighboring homœopath was called, and, finding more abdominal distension than could be accounted for by pregnancy, proposed, after consultation, to aspirate. The procedure being objected to by the husband of the patient, Dr. Olcott was requested to assume charge of the case, and ascertained that the over-distension was due to an immense amount of fecal accumulation, obscuring all abdominal evidences of pregnancy. The loaded colon could be felt extending to and under the margin of the ribs. Repeated injections and digital assistance were required to dislodge the impaction, which proved to be made up largely of strawberry-seeds.

There could now be detected in the right iliac fossa, corresponding to the location of the broad ligament, an ovoid tumor, extremely sensitive, and presumed, by reason of the history of previous pelvic distress elicited from the patient, to be an inflammatory exudate. Vaginal examination revealed the same resisting mass filling Douglas's *cul-de-sac*. With the aid of anodynes, the patient was kept comfortable. Much difficulty was repeatedly experienced, however, in freeing the intestine of fecal accumulations from time to time; the nodular collections were readily discoverable, obstructing the descending colon. On one or two occasions the patient had voluntary evacuations. The evidences of pregnancy were at the time quite conclusive.

July 20th.—The heart's action became alarmingly weak, but responded well to ammonia and digitalis.

24th.—I was hurriedly summoned, and told that miscarriage was threatening. I had much difficulty in making a satisfactory vaginal examination, owing to the extreme pain the slightest

pressure occasioned. The os was well dilated, and the foetus was soon expelled. The placenta followed within a reasonable time, and appeared intact. The patient's condition improved markedly for a few days until August 3d, when, in the absence of Dr. Olcott, I was hastily called. I found the heart's action extremely feeble, the extremities cold, but the intellect clear. Resort to vigorous stimulation failed to avert death, which occurred at 6 p. m.

Post-mortem, twenty-one hours and a half after death, by Dr. J. H. Hunt and Dr. Myerle.—The abdomen was tense and distended, and there was a hard, resisting tumor in the right iliac fossa, smooth and ovoid, its position corresponding to the situation of the Fallopian tube. The lungs were perfectly normal except upward displacement. The heart was normal and contracted. The diaphragm was forced up to the fourth interspace on the right side, and on the left side to the third space, its concavity being occupied by the stomach (which was healthy) on the left side and by the liver (also normal) on the right side. The spleen was congested. The peritoneum was neither adherent, thickened, nor congested. The intestines were healthy; there were some fecal accumulations in the descending colon. The kidneys were normal in position. The capsule of the right one was adherent, and milary nodules were scattered over its surface. The organ was much enlarged, measuring 5 x 3 inches. An abscess was found involving almost all of the pelvis and the pyramidal portion of the organ. The left kidney was large and white; the capsule was not adherent (chronic desquamative nephritis). There were no tubercles. The uterus was considerably enlarged, its external measurements being 3½ x 3½ inches, and it readily admitted a finger into its cavity. There was found growing from the right side a tumor about 5 inches in diameter, and on the left side there were several small growths, all hard and resisting. That upon the right projected forward, forcing out the abdominal wall and extending backward so as to occupy the sacral region. The Fallopian tube rested upon its anterior surface. The largest of the tumors on the opposite side was of about one quarter the size of that on the right. The sigmoid flexure was impinged upon by the growth. On section of the uterus, a clotted mass was found adhering to its inner wall, appearing very like a piece of adherent placenta. On section of the tumor, it seemed evidently made up of fibrous tissue. The diagnosis was subperitoneal uterine fibroid. The cause of death was shock, due to rupture of a cyst upon the posterior aspect of the largest growth and the escape of its contents into the peritoneal cavity.

Specimens of Pelvic Tumors of various kinds were presented by the Curator, Dr. J. H. HUNT, in behalf of Dr. CHARLES JEWETT, Dr. N. B. SIZER, and Dr. G. G. HOPKINS.

Polycystic Ovarian Tumor; Removal; Recovery.—Dr. WALTER J. CORCORAN read the following:

Mrs. K., aged thirty-five, a native of Ireland, the mother of six children, the youngest of which was born fifteen months ago, was admitted to St. Mary's Hospital May 8, 1884. About two years previous to her admission she noticed a swelling in her left side. Being pregnant at the time, she thought the abdomen was larger than it should be for the supposed stage of pregnancy (about four months), and consulted a physician, who told her she had a tumor. Shortly after she felt life, and thought the doctor was mistaken. She went on to term and was delivered, after normal labor, of a healthy child, but the swelling in the left side still remained, and the physician confirmed his former diagnosis. She had had mild symptoms of peritonitis on several occasions. Some time after delivery, and four months prior to operation, she came to St. Mary's for examination. A tumor was found on the left side. It was freely movable, and could be grasped between the two hands and moved to the

other side of the abdomen. During the last six months the tumor has grown quite rapidly, but, except from its size and weight, has occasioned her very little pain or inconvenience. Her menstrual history has been normal. The steady, and of late rapid, increase in the size of the tumor, with depreciation of her general health, determined her to submit to operation for its removal.

Operation, May 10th.—After the usual incision through the abdominal wall and peritoneum had exposed the cyst, a trocar and cannula were introduced and about four quarts of thick, greenish fluid withdrawn, when the flow stopped and it was found that the tumor was polycystic. After one or two small cysts were evacuated another was tapped, which yielded about two quarts of fluid. The remaining portion of the tumor was found to be solid, too large to be drawn through the incision, and held by membranous adhesions. The abdominal incision was enlarged and the adhesions were broken down. Two of them, especially strong and vascular, required division with scissors after preliminary ligation with catgut. The adhesion to the bladder was especially troublesome, and a sound, introduced as a guide to its position, was plainly seen covered, but by a very thin layer of tissue, presumably only the mucous coat. The tumor was found attached to and involving the left ovary, tube, and broad ligament. The pedicle was formed by transfixing the broad ligament and ligating close to the uterus with strong silk. The tumor was then removed, and the stump was seared with the galvanic cautery and drawn down to the lower angle of the wound. The cavity was carefully sponged out, and several bleeding-points were secured with catgut ligatures. The silver-wire sutures were placed in the abdominal wound, the peritoneum was again inspected, another ligature was thrown around the pedicle, which was dropped into the cavity, and the wound was closed. The dressing consisted of a strip of carbolized lint over the sutures, covered by a layer of absorbent cotton and a thick pad of marine lint, secured with a binder.

The patient bore the operation fairly well, and passed a quiet but sleepless night. The subsequent history presents nothing of interest, except that recovery was somewhat delayed by a mild cystitis, which yielded readily when the bladder was washed out with hot water and borax. The sutures were removed on the tenth day, and the patient was transferred to her own room on the sixteenth.

Cysto-sarcoma of the Uterus; Peritonitis; Death.—Dr. CORCORAN read the history of this case also, as follows:

Ellen C., aged thirty-seven, Irish, single, was admitted to St. Mary's General Hospital, August 19, 1884, with the following history: Abdominal enlargement began eleven years ago, at which time she had menorrhagia. There never was sufficient pain to cause distress. Soon after the enlargement of the abdomen, oedema of the feet appeared and was more prominent in the right one, though now about the same in both. During ten years the disease made little progress. About one year ago the menses were absent for about five months, and then became regular up to March of this year, since which time there has been no menstrual flow. About the same time the abdomen began to increase rapidly in size until, in June, it was so large and occasioned so much dyspnoea that tapping was necessary for her relief. She says that nineteen quarts of clear fluid were drawn off, and that then a hard tumor of about the size of a cocoanut remained. The relief obtained was brief. The abdomen began to fill up again, and is now larger than in June. She has but little rest, and it is impossible for her to lie down on account of the interference with respiration.

Examination of the urine revealed nothing. The patient appeared extremely wretched and feeble. She moved with difficulty, and was greatly distressed in breathing. The photograph,

by Mr. Van Cott, shows the appearance of the abdomen better than any description. From the symmetry and peculiar appearance of the abdomen, the marked fluctuation, and the history, it was evident that the bulk of the fluid was a peritoneal effusion. The tumor could not be made out. Digital examination by the vagina gave no information. As evacuation of the fluid was imperative, it was deemed best to effect this by an exploratory incision, and then, after examination, if possible, to remove the tumor. Dr. John Byrne believed the tumor would be found to be malignant, as uterine and ovarian tumors, accompanied by peritoneal effusion, with oedema of the limbs, were generally, in his experience, malignant. The late rapid development of the symptoms after ten years of slow progress tended to show a malignant development in what may have been originally a benign growth. The gravity of her case was laid before the patient, and she asked for the operation as her only chance. She was put on preparatory treatment and the operation performed.

Operation, August 30th.—An incision was made in the median line down to the peritoneum. A large trocar was then used and twenty-seven quarts of clear, straw-colored fluid were removed. A large tumor was then found, in general hard, but with several points giving fluctuation. It was a continuation of the uterus and free on its upper and lateral borders. It was adherent to the left Fallopian tube. The incision was enlarged. Two cysts were punctured, which did not materially diminish the size of the tumor, which was with difficulty drawn out. The utero-ovarian vessels were ligated. A few turns of rubber tubing were used as a tourniquet, and the tumor was removed at the level of the internal os uteri. Two or three vessels, which had escaped the tourniquet, occasioned considerable hemorrhage, but were finally secured by ligature. The cervix was transfixed by a needle carrying a double ligature of strong silk, and in this way the stump was securely ligated. The rubber tourniquet was removed, the stump seared with the galvanic cautery, and another silk ligature tied around it. As these ligatures included so much tissue, it was deemed best to use a clamp as an additional safeguard against hemorrhage, so that the pedicle was treated by the extra-peritoneal method. The wound was closed and dressed as in the previous case.

The patient bore the operation well, and was removed to bed in fairly good condition. For the first twenty-four hours her condition was as favorable as could be expected, but then the abdomen became tympanitic, the temperature rose gradually, and she died on the fifth day. She had no pain whatever. Her temperature did not run up high till within twenty-four hours of her death, when it was 105° F.

The following is the report of the autopsy, by the pathologist, Dr. Leif: Body partly wasted. Abdominal wound extending up from the pubes to near the umbilicus. A clamp holding the pedicle of the tumor was found in the lower part of the wound. The clamp was imbedded in a transverse fold of the abdominal parietes due to over-distension of the intestines with gas. The lungs were emphysematous and a little hypostatically congested and oedematous. The heart was soft and flabby, and all its cavities were filled with post-mortem clots. The liver was very fatty, soft, and friable, with very rotund margins. Its capsule was very thick. The spleen had a very thick capsule, and was firm and light in color. The pancreas was normal. The stomach and intestines were much distended with gas. The kidneys were soft, but healthy. The peritoneum below the umbilicus was very thick and inflamed, and had a greenish hue. This greenish discoloration was very sharply defined by a distinct line extending transversely completely across the anterior abdominal wall at the level of the umbilicus. All below this was greenish, and above it normal in appearance. The pedicle consisted of the cervix uteri stretched so as to measure over

5 cm. in length. The wound had partly united. It had a healthy appearance.

Dr. J. H. H. BURGE expressed it as his opinion that it might have been well to remove a portion of the superfluous part of the anterior abdominal wall.

Dr. F. W. WUNDERLICH remarked that Hegar and Kaltenbach, who had had the best results, prevented many deaths from peritonitis by sewing the visceral peritoneum attached to the stump to the parietal layer of the anterior abdominal wall at the edge of the wound. Thus the peritoneal cavity was hermetically sealed. The elastic ligature was used in these cases. The exposed surface of the stump was treated with the chloride of zinc. The plan of treatment was only resorted to in uterine excisions and not in ovariectomies. The great object in this plan of treatment was to obtain early and complete union between the peritoneum of the stump and that of the edge of the wound.

Tubal Pregnancy; Rupture of the Sac; Death.—Dr. A. H. P. LEFF presented the following history of the case:

The patient was a young lady, well nourished and of fine physique, and married not quite eleven months. She was but twenty years of age, and born in this country. On Sunday even-

(August 21st) Dr. J. E. Clark was called in to see her. He found her lying upon her back on the floor in the basement of the house, with her lower extremities a little abducted, and complaining of total inability to move. She had intense abdominal pain; the onset had been quite sudden. There was decided nausea, with intense thirst. The pain was most marked in the right iliac region. She had never been sick before. She had spent all the day at some country place, and had eaten very freely of melons and grapes without, however, having swallowed any seeds, but the preceding week she had swallowed many seeds while engaged in eating grapes. She had failed to menstruate at her last two periods. The doctor noticed a slight bloody discharge from her vagina upon inspection, and was told that the patient had had it for the last two or three weeks, but that it had always been very slight. Her abdomen was also greatly distended, and her bowels had moved but sluggishly the last few weeks. An enema of soap, water, and castor-oil was ordered and given, and followed by active results. Her pulse was feeble and beat 120 times a minute. The sulphate of morphia was administered hypodermically in the form of Magendie's solution, μvii being the dose. The patient was advised to drink warm water, but could not swallow. Later in the evening she vomited very freely, but slept well during the night. The doctor saw her several times the next day, and found the pains returning with renewed vigor and simulating uterine pains. He prognosticated an abortion. During the afternoon he made a vaginal examination and found the uterus inactive, but low down and with an elongated cervix and a slightly enlarged body; μvii of Magendie's solution were again given hypodermically that night. The following morning she felt very uncomfortable, and received μv once more. The day previous hot fomentations of hops had been applied to her abdomen, while on this day flaxseed poultices were used instead. Early in the evening of this day (forty-eight hours after the onset of marked symptoms) her pains became very severe, and were referred to her bladder. Persistent efforts to urinate proved ineffectual. μx of Magendie's solution were again given, and an hour later she felt very comfortable and cheerful, and laughed. At one o'clock that night the doctor was hastily summoned to the bedside of the patient. He found her breathing irregular, intermissions occurring at every fifth respiration. They averaged from 25 to 30 a minute. Her pulse was very small, and beat 180 times a minute. She was almost completely comatose, and could hardly be roused at all. Her pupils were very much contracted. Dr. A. Ross Matheson was hastily sent for, and, upon consultation with him, the patient received

hypodermically $\frac{1}{4}$ gr. of extract of belladonna and μx of tincture of digitalis. An hour later half of this quantity was given again and in the same way. Her pulse became fuller, and went down to 120. Her respirations were 42. She died two hours later, at 6 A. M., being about sixty hours after the onset.

I made the autopsy thirty-four hours after death, in the presence of Dr. J. E. Clark, Dr. A. Ross Matheson, and Dr. H. Tut-hill Halleck. She was short and stout, having a remarkably well-formed figure and a very pale skin. Her complexion was dark. The adipose tissue of her anterior abdominal wall was fully 7 or 8 cm. thick. All her viscera were extremely pale. The lungs and heart were normal, except that the latter contained firmly clotted and decolorized blood in all its cavities. Elsewhere the blood was in a fluid state in its normal receptacles. The liver was slightly fatty. The spleen was remarkably pale, bloodless, and soft. The pancreas was pale and soft, and its peripheral lobules had undergone fatty metamorphosis. The stomach was normal, as was also the rest of the *primæ viæ*. Both kidneys were healthy but pale. Upon opening the abdomen, a sero-sanguineous fluid escaped amounting to about 5 litre. A large blood-clot was found in the lower part of the abdomen, resting upon and mingling with the intestines. Its upper margin formed a moderately straight line, extending transversely across the abdomen up to within 2 cm. of the umbilicus. Imbedded in it, and adherent to it by recent inflammatory adhesions, were loops of the ileum, the side of the cæcum, and the folds of the sigmoid flexure. The pelvic cavity was filled with the clot, and the uterus imbedded in and adherent to it. A sac fully 6 cm. in diameter was discovered connected with the right Fallopian tube at its middle. It contained the residual portion of a large blood-clot, and, after this had been removed, the unruptured amniotic sac was exposed, containing an embryo measuring about 2 cm. in length. The rupture had taken place at that portion of the surface of the sac facing the left lumbar region. The uterus was but slightly enlarged and very pale. Within it was found a false, thin decidua half exfoliated and red in color.

This specimen has not been presented merely as a curiosity to be gazed upon, but also for the purpose of eliciting a thorough practical discussion of the clinical aspects of the case, and especially with reference to the diagnosis and treatment of similar cases. I myself do not see how a diagnosis could have been made in this case except by some one specially interested in the class of subjects to which it belonged, and then, very likely, only at a time when such a person was doing a good deal of thinking on that subject. Guided largely by the teachings of Professor Jewett, I would express it as my opinion that the proper thing to do in case a reasonably confident diagnosis had been made would be to open the abdominal cavity, and, if need be, make a counter-opening in the *cul-de-sac* of Douglas to insure good drainage. This might be facilitated by elevating the shoulders and chest of the patient. Of course, the tying of the bleeding vessels and excision of the abnormal mass, with a thorough cleansing of the abdominal cavity, are understood. Is it not best in cases of doubtful diagnosis, when a patient seems to be in serious danger and has symptoms of internal hemorrhage, most likely abdominal, to make an exploratory abdominal incision for diagnostic purposes?

Dr. J. E. CLARK stated that the patient from whom the specimen had been removed had very thick abdominal walls, which made it impossible to feel the tumor.

Dr. WILLIAM MADDERN thought it much more difficult to diagnose cases in which the hemorrhage was slow than those in which it was rapid. He had seen three cases. In one of them the condition was suspected, but no one had the courage to operate.

Dr. LEUF stated that the clot in the case he had reported was very firm and quite fibrinous in some places, while in others it bore every evidence of having recently formed. This was good evidence of the hemorrhage having been gradual and persistent.

Syphilitic Brain Disease.—Dr. LUCY M. HALL read a paper embodying the history of a case. [See p. 430.]

Syphilitic Disease of the Finger; Amputation.—Dr. HALL also presented the following case:

L. S., aged twenty-six, a widow, intemperate and lowly, was born in Scotland. Her father and one sister died of heart disease; her mother is living, and healthy. Her first child died of hydrocephalus at the age of four months. One year ago she aborted at the fourth month of pregnancy. She denied ever having had venereal disease.

February 3d, 1882.—Admitted to the hospital. Pulse, temperature, and respiration normal. Tongue clean, appetite good, bowels constipated. Menses scanty and irregular. General condition not good. She said that her finger began to be sore five years ago, that she had been treated by various physicians since that time, but that there had been no improvement. At the time of her admission to the hospital the finger (the index of left hand) was diseased nearly to the second joint. It was very painful, the pain passing up the arm and shoulder and causing general disturbance of the system. The finger was flattened upon the dorsal and palmar surfaces, and a good deal enlarged, giving it a broad, flat appearance. It was covered at the end and upon the dorsal surface with various pits and projections, was dry and scaly, and had a dark-purple color. The general appearance was so malignant, and the history of former treatments so discouraging, that amputation was decided upon. This decision was entirely in accord with the wishes of the patient.

4th.—The patient was anesthetized and the finger amputated a little below the second joint. Antiseptic precautions were employed during the operation and in the dressings. The wound did not heal well; there was some sloughing, and the general condition of the patient was unsatisfactory. She finally admitted that she had suffered from chronic sore throat, and that she had been troubled with nocturnal headaches and rheumatism. A second amputation was decided upon, the same precautions being observed as in the first operation. A short stump, with a well-fitting flap, was secured, and the patient was immediately placed upon two-grain doses of iodide of potassium. The healing of the wound was now rapid and satisfactory, being complete in two weeks.

The patient afterward suffered severely from syphilitic rheumatism and neuralgia, which finally yielded to antisyphilitic treatment.

Dr. F. W. ROCKWELL said that Dr. Hall's first case exemplified in a marked degree one clinical point in all these cases of nervous syphilis, whether "explosive" or more chronic in their forms, and that was that the tolerance of the stomach for large doses of the potassic iodide was the pivot upon which the outcome of the case often turned. Of course, many cases were suddenly fatal; but, where time for treatment remained, the surgeon was at the mercy of the patient's stomach. He had had two cases recently which illustrated this point. The first was that of a young woman who came to him at St. John's Hospital, exhibiting all the symptoms of cerebral syphilis, which she said had only been developing for about a week. She was then excitable, crying constantly while telling her story, was aphasic, had a dilated pupil on the right side, and slight left hemiplegia and other nervous phenomena—such as patchy anæsthesias, etc.—were present. She was urged to enter the hospital at once and put herself under treatment, but declined until

three days afterward. During that time she had so far lost her powers as to be unable to walk one block to the hospital from the cars, spoke incoherently and almost unintelligibly, and was comatose in a few days. Under rapidly increased doses of iodide of potassium, improvement was beginning, when she developed an intolerance for the drug in any form, and steadily failed, dying comatose and paraplegic in a short time. On entering the hospital she had admitted infection two or three years previous.

The second case was that of a young man who, six years after a primary sore and almost trivial secondary symptoms, began to manifest anomalous nervous disturbances and severe mercuriana. After a few days of prodromes, he was suddenly seized with complete paraplegia, rectal and vesical paralysis, nocturnal delirium, and intense cephalalgia, aphasia, mydriasis, etc., as in the first case. Potassic iodide was given in gramme doses, and rapidly pushed till thirty grammes per diem were given in four doses. Not until ten- or fifteen-gramme doses were reached did any improvement manifest itself, and then steady diminution of all the symptoms began. In three months the patient began to resume his employment, though some ataxic phenomena persisted for months, and increased whenever any diminution in the daily dose was attempted. Nothing but the unusual tolerance of the stomach for the drug had in this instance saved the patient's life, and the speaker was in the habit of basing his prognosis in these cases largely on the power of the patient to retain and absorb the huge doses necessary for a cure.

CHICAGO MEDICAL SOCIETY.

Meeting of October 6, 1884.

The President, Dr. D. A. K. STEELE, in the chair;

Dr. LISTON H. MONTGOMERY, Secretary.

National Sanitation.—Dr. JOHN BARTLETT, chairman of the Committee on National Sanitation, reported that, while the committee had agreed on the substance of the proposed resolutions to be submitted for presentation to Congress, the resolutions were not in shape to report to the society, although signed by most of the members. He therefore asked for further time to consider the matter, which was accorded.

Dr. JOHN H. RATCH, secretary of the Illinois State Board of Health, had read the resolutions prepared by the committee, and, as he had been invited by one of its members, he would speak of their importance, and that of national co-operation with State and municipal governments in arresting the spread of epidemics. Matters should be so arranged that there would be concert of action in all the municipal and State boards with a national health organization. The National Government should have control of Inter-State quarantine. The trouble all arose out of inefficient maritime quarantine. Illinois was specially interested in this, from the St. Lawrence River to the Rio Grande, and from the Atlantic Ocean to the Pacific Ocean, for this State paid more internal revenue tax than any other State in the Union—New York not excepted. Cholera might reach Montreal or Quebec and be brought to this city and State over the Grand Trunk, the Michigan Central, or the Michigan Southern Railway. We had authority to stop the trains at the State line only, and prevent their entering the State of Illinois. New York controlled that port exclusively, and Illinois had no authority to interfere, while her interest in keeping out diseases was just as great as that of New York. The Illinois Board of Health was prepared to prevent the entry of infectious and contagious diseases, no matter what contingency might arise, but it would be better if she could depend upon the aid of her sister States, which were equally interested. Two thirds of the immi-

grants coming to this country arrived at the port of New York. The Emigrant Inspection Service carried on by the National Board of Health a few years ago, under the auspices of the National Government, was done at a cost of \$50,000, when some forty thousand emigrants or more were vaccinated on the trains, and there was no detention. The National Board of Health no longer existed except in name, the last Congress having cut off all appropriations; consequently we were not in so good a condition to ward off epidemics as we were three or four years ago. An endeavor to protect the States could not be well made, on account of inefficient maritime quarantine. The only resource we had at present to cope with these diseases was for the different States to act in good faith with each other. An illustration was cited by the speaker to prove his statement correct.

In 1878-'79, along the banks of the Mississippi and Ohio Rivers, epidemics prevailed. Since the organization of the Sanitary Council of States along these rivers, infectious diseases and all other diseases were much less prevalent. The speaker then recited the history of the National Board of Health, the inefficiency of our laws, etc., and cited further illustrations. How inadequate the surgeon of this port and the one at Cairo would be to cope with any form of epidemic that threatened an invasion in this State! Instead of this being only under the control of a State, it should be controlled by the National Government. Now was the time to prepare to secure legislation instead of waiting until after the occurrence of an epidemic, as had been done heretofore. Those who had charge of sanitary interests in the different States should study the causes of disease, and, through thorough co-operation with a national health bureau, we should be well prepared to protect ourselves against an invasion of cholera next year.

No one man could control the state of commerce satisfactorily, nor could this be done by one State alone; more States should be represented, and concert of action between all those in authority should prevail. The United States Treasury was entirely independent of States in this respect. A conference of the boards of health of the several States and territories would be held at St. Louis next week, having for its object the co-operation of all authorities for the purpose of controlling epidemic and contagious diseases. He thought that some plan would be evolved that would prove satisfactory to all, and do away with the jealousies that had hampered the action of the national health bureau. The general feeling prevailed that we were going to have cholera in this country next year, and now was the time to prepare for it, as the resolutions call for.

Dr. J. H. HOLLISTER said that, as a member of the committee, he should decline to attempt to instruct Congress as to its duties in the matter, but thought that a memorial presented by this society would be the better mode of procedure. If our memorial to Congress only asked for what was most wanted by the public, then we, as medical men, had done our part. It was a subject that took hold of common interests, and how to render efficient aid suitably but not unnecessarily was something upon which more wisdom can be gained by other methods than temporary discussion. He thought our wisest men should meet in conference and unite on some practical method, and then urge legislative action. He asked Dr. Rauch to what extent the States were moving in the direction of having State Boards of Health organized, and to what extent their authority reached. He was answered that Massachusetts, New Hampshire, Connecticut, New York, New Jersey, Maryland, West Virginia, Virginia, Indiana, Illinois, Michigan, Kentucky, Tennessee, Louisiana, Mississippi, Arkansas, Alabama, Iowa, Wisconsin, Minnesota, and Missouri each had its State Board of Health. Ohio, Pennsylvania, Maine, and Vermont had none; Lower Canada had none; but the Ontario Board of Health was

in good shape. The Michigan Board of Health was an advisory one; the Illinois Board of Health controlled quarantine, and could call on sheriffs and constables to obey her dictates. The boards of Missouri and Minnesota were nearly like ours. New York's board was partly like ours in authority. Indiana's was nearly like ours, only better, for there they had county boards of health. The boards of health of Maryland and Virginia were also very efficient.

Dr. L. H. MONTGOMERY alluded to the merits of the National Board of Health and the efficient services it had rendered in the past, and asked why it should not be sustained and appropriations made for it, on the same general principle that we should retain the services of any faithful servant that had been in our employ. He had spoken upon the subject to the representative of the Congressional district where he resided, and had been informed by the member that he would be glad to do his part and use his influence toward securing the granting of legislation for the establishment of some form of a national sanitary organization. The speaker was also assured by the honorable gentleman that he had been and was at present a friend of the National Board of Health. Regarding a "memorial to Congress," as suggested by Dr. Hollister, the resolutions had a clause providing for this, which had been very favorably considered. Indeed, if need be, we might go further, and have a petition transmitted simultaneously with the memorial, with an array of prominent names from all over the country, asking our national legislators to provide for the maintenance of such a board for Inter-State observation, etc., constituted by the appointment of some one scientific medical gentleman from each State and territory in the Union. Our representative on the National Board from this State was eminently well known, and should be kept there.

Dr. R. E. STARKWEATHER had hoped that the committee would be prepared to submit their resolutions this evening. He, as one of its members, indorsed every word they contained, even at the risk of their being (as possibly they were in one place) tautological. He hoped the committee would be able to have them ready before the close of the week.

Dr. RAUCH, in conclusion, stated that he intended to speak to some extent upon this subject at the meeting of the State boards of health to be held at St. Louis next week. A special meeting would probably be held at Washington in December of all the State sanitary boards, at which time this subject will receive special attention.

The society tendered a vote of thanks to Dr. Rauch for his address and the information given. The Committee on Resolutions was requested to meet immediately after the adjournment.

NEW YORK ACADEMY OF MEDICINE.

Meeting of October 2, 1884.

The President, FORDYCE BARKER, M. D., LL. D., in the chair.

The Three Tonsils: Some Practical Suggestions as to their Structure, Function, and Diseases, was the title of a paper read by Dr. F. H. BOZWORTH. The author said that, with regard to the three tonsils, he had for some time entertained certain views different from those usually expressed in medical literature. By the three tonsils he meant the two glandular masses found between the pillars of the fauces and that found in the vault of the pharynx, first recognized and described by William Hunter. The former were called the faucial tonsils and the latter the pharyngeal tonsil. The faucial tonsils were not, as generally described, covered by a fibrous sheath, nor were they necessarily almond-shaped, but of whatever shape any morbid process might have given them. The tonsil was not an

organ of the body in the sense that the liver or spleen constituted an organ, and therefore it had no special function to perform in the animal economy. Virtually there were no tonsils; the organ so-called did not exist in the healthy throat, but was the result of a morbid process. All mucous membranes were richly endowed with glands, and perhaps no portion of the mucous tract called for a greater amount of mucus in the performance of its function than the upper air-passages, and there we found the glands aggregated in masses. In a condition of health this aggregation of glands did not project prominently from the mucous membrane, nor was its existence easily demonstrable by inspection. But the mucous membrane of the upper air-tract was liable to repeated attacks of inflammation, especially in the young, and the tendency of a chronic inflammatory process was to develop hypertrophy in these glands. Dr. Bosworth considered that the only function of the masses of glands in question was to supply mucus or lubricating fluid.

The three tonsils were liable to the same diseased conditions. These might be considered under the following heads: Acute follicular, subacute, croupous, and diphtheritic inflammation, and hypertrophy. He did not believe that phlegmonous inflammation ever occurred in the tonsil; quinsy was rather a disease of the cellular tissue of the fauces than of the tonsils; it involved the areolar tissue, especially of the soft palate, in rare instances of the pharyngeal walls, and not the glands. He believed it to be usually due to the rheumatic habit. Within the past three years 133 cases had come under his observation—88 in males, and 45 in females. The oldest patient was aged sixty-nine years, and the youngest nine months. Of the entire number of cases, the phlegmon occurred in the soft palate in 115; in the pillars in 11; beneath the tonsil in 2, but in the tonsil proper in none. In a large number of instances quinsy was aborted by the administration of the salicylates, and when it did not have this effect, the medicine seemed to hasten suppuration. He gave a tablespoonful every two hours of a solution of three drachms of the salicylate of sodium in six ounces of water. He had also found the bicarbonate of sodium useful, as recommended by Dr. Barker, but not equally efficacious with the salicylate. If an abscess formed it should be treated as an abscess of any other portion of the body—incised.

Dr. Bosworth thought that in acute follicular amygdalitis there was a greater amount of constitutional disturbance than could be accounted for by the local affection, and he had been led to regard it as one of the essential fevers, liable to recurrence.

Hypertrophied tonsils gave rise to a train of symptoms mainly due to mechanical obstruction of the passages. The enlarged tonsil showed a tendency to subside at the age of puberty. It developed purely from a local morbid process, and was not the manifestation of a dyscrasia. Hypertrophy of the pharyngeal tonsil had been described by many writers as adenoid tumors or vegetations of the vault of the pharynx. If the hypertrophied tissue offered a mechanical obstruction it should be removed. Local medication, he believed, had no effect whatever in reducing genuine hypertrophy of the glands. It had been suggested that only a portion of the tonsil should be removed, but there was no more reason for this than there was for removing only a portion of a tumor developed elsewhere in the body. There was no danger from hæmorrhage. In children there was only a slight amount of bleeding, and if in the adult considerable hæmorrhage should arise from any mistake on the part of the operator, it could best be checked by the actual cautery. It would be found to come only from the nutrient artery, and on arterial hæmorrhage styptics had no effect.

Before calling upon the fellows of the Academy to discuss the paper, the PRESIDENT offered a few remarks concerning the

use of bicarbonate of sodium as a remedy for quinsy. He had been in the habit of seeing a few cases of this affection every year, and it had almost invariably gone on to suppuration, until, for some reason he could not now recall, he began the local application of the bicarbonate of sodium, and since then in most instances the disease had not gone on to suppuration.

Dr. DOUGLAS said there were a few things in the paper of the evening to which he would take exception, but with regard to most of the points made he would record his judgment in accordance with that of the author. He agreed with Dr. Bosworth that quinsy was one manifestation of the rheumatic, or rather of the gouty, diathesis. He had employed the bicarbonate of sodium in its treatment for many years, and had also given the ordinary remedies against the gout. He found a beneficial effect from a powder containing one per cent. of menthol and ninety-nine of sugar of milk. While the knife would surely remove the enlarged tonsil, he did not think it always necessary to resort to it, as the enlarged glands could be reduced in size by the continued use of a powder composed of common salt, camphor, chloride of ammonium, and sugar of milk.

Dr. F. H. HAMILTON was disposed to agree with the author, that the proper treatment for a hypertrophied tonsil was removal with the knife; still, he had observed that in young people the hypertrophied condition disappeared or became less of an obstruction as they attained to adult life. When the author said there was no danger from hæmorrhage, he probably did not refer to the acute or engorged stage, or to the hæmorrhagic diathesis. He thought as much of the gland should be removed as the knife would include; he knew of no reason why a part of it should be left behind.

Dr. A. JACOB believed the enlarged tonsil was amenable to no other treatment than removal with the knife. Astringent agents could have no effect in diminishing its size. In cases in which they seemed to have such an effect the true explanation was growth of the fauces or contraction of the hypertrophied tissue in the gland. Bleeding might occur from cutting away a portion of the soft palate with the tonsil—an accident which could not always be avoided. The best means for checking hæmorrhage was digital compression, and it might prove necessary to employ this an hour or more; in some cases, however, the hæmorrhage was thus checked almost immediately. He could not agree with Dr. Bosworth that acute follicular amygdalitis was an essential fever; he regarded it as a local disease. Some of the cases which had been considered instances of acute follicular inflammation he thought might have been instances of diphtheria without a well-marked diphtheritic membrane. It was a serious error to suppose that all patients suffering from diphtheria must necessarily die, and to look upon all those cases in which recovery took place as instances of some other form of throat affection. He laid stress upon this point, although it was somewhat foreign to the matter under discussion, because of its importance to the public health.

Dr. L. WEBER had not yet seen a case of phlegmonous inflammation around the tonsil which he could trace to the gouty habit. He had seen it most frequently in people of poor general health.

The PRESIDENT here remarked that at one time guaiacum was highly recommended in this throat affection, on the strength of its supposed relation to gout, but he had not found the remedy so beneficial as certain articles in the medical journals would have led him to anticipate.

Dr. A. C. POST thought the best way of getting rid of the enlarged tonsil was to remove it.

Dr. F. H. HAMILTON had best been able to check hæmorrhage by the external application of ice or snow to the throat.

Dr. FORTMIGHT had been able to abort some cases of quinsy by the administration of the tincture of aconite.

Dr. W. C. JARVIS again called attention to a distinction which he had before made between the soft and the hard enlarged tonsil. The former could be extirpated with the knife without danger from hæmorrhage. The latter, or indurated, or scirrhous enlarged tonsil, was syphilitic, and, when cut into, was liable to give rise to even fatal hæmorrhage. Here the cautery or the snare alone should be employed. He did not think any more of the tonsil should be removed than was really necessary; it probably performed the office of protecting the carotid artery in addition to lubricating the air-passages.

Dr. BRANDEIS was a little astonished at the views entertained by Dr. Bosworth concerning the function of the tonsils. He believed in the Darwinian theory of the survival of the fittest. The tonsils had survived some thousand years, and they doubtless had performed their function, whatever it might be. Still, a diseased tonsil might be worse than no tonsil at all, and it might become necessary to extirpate it. He then pointed out the advantages of the tonsil guillotine over the knife. He had always found some hæmorrhage after the operation in the young subject. He allowed the patient to sip a solution of tannic acid in case of bleeding. Quinsy had before been described as a peri-amygdalitis, but he could not agree that it was always an inflammation of the tonsillar capsule. He recommended the tincture of aconite and ammoniated tincture of guaiacum in its treatment if suppuration had not taken place.

Dr. J. L. CORNING had arrested severe hæmorrhage after amygdalotomy in one case by the use of his carotid compressor.

Dr. BOSWORTH, in closing the discussion, said he did not believe that astringents could have any effect in reducing the enlarged tonsil. As to hæmorrhage, it proved troublesome only in adults; in children there was only a little oozing. That amygdalotomy was not dangerous was evident from the fact that not a single fatal case had been recorded in medical literature. He would except those in which the carotid artery had been cut—an accident which could not befall a surgeon. Hæmorrhage was best checked by applying the cautery from above downward, thus avoiding cooling of the iron by the blood running down from above. He thought peri-amygdalitis a very good name for quinsy, but as to the tonsillar sheath always being involved, he did not recognize any such sheath as commonly understood by the term. As for the tonsils fulfilling the office for which they were destined, he had said in his paper that he considered them simply the result of a morbid process. They were not to be found in the normal throat.

NEW YORK PATHOLOGICAL SOCIETY.

Meeting of September 24, 1884.

The President, Dr. GEORGE F. SHRADY, in the chair.

Sarcoma of the Lung and Mediastinum.—Dr. VAN GIESEN presented a specimen of supposed primary cancer of the lung and mediastinum, for which he was indebted to Dr. French, from whom he had obtained the following history: The patient was forty-one years of age, a German woman, who was admitted to the hospital September 11, 1884. Over the upper lobe of the right lung there was entire absence of the respiratory murmur and of vocal fremitus. The respiratory sounds were unaltered by change of position. There was also complete dullness. The physical signs on the left side of the chest were normal. The patient was much emaciated. There was œdema of the left upper eyelid, but there was no œdema of the extremities. There were tympanites and dyspœa. There was cough

without expectoration, nausea without vomiting. There was no history of hereditary cancer. Death took place on the 16th. The brain was not examined. The pericardial sac contained eight ounces of clear serum. In the mediastinum and upper portion of the right lung there was a hard cancerous mass. The remainder of the lung was healthy, with the exception of a few adhesions at the base. The bronchial glands were enlarged, and the right bronchus was constricted to the size of a No. 8 English catheter. The kidneys and spleen were found to be normal; the liver was slightly fatty. Unfortunately, the uterus was not examined. A hasty microscopic examination of the diseased lung-tissue pointed to sarcoma, not to carcinoma.

This was the fourth or fifth similar case which the speaker had had the opportunity to see during the past three years, and he had found a feature of importance in the diagnosis to be absence of vocal fremitus. Usually, with condensation of the lung, we expected to find the vocal fremitus more or less exaggerated; but here we could readily account for its absence by the fact that the right bronchus was nearly closed. In one case, which Dr. Janeway had seen with him, this feature had been an aid in the diagnosis. With regard to the œdema of the left eye, this occurred in one of the other cases, and, as in this instance, it was on the same side as the diseased lung. He had tried to account for it on the supposition that the circulation on that side was obstructed by the enlarged glands.

Precocious Phagedenic Syphilides.—Dr. WYETH presented a patient, thirty-five years of age, a book-keeper and a German, who was admitted to Mount Sinai Hospital on the 11th of July, 1884. He had suffered from gonorrhœa several times, the last attack being eight months before his admission. Five weeks and a half prior to July 11th he had intercourse with a prostitute, and one week later observed a small blister at the base of the penis. He had not had intercourse for some weeks prior to this time. The blister remained of about the same size for ten days, when he again had intercourse, and a few days later the sore began to extend and to become very painful. On admission there was a large non-suppurating bubo at the base of the penis, the apex extending up the penis, one angle at the base extending on to the scrotum, and the other on to the groin. It measured over an inch in length and in depth. There was a slight papillary eruption over the face and extremities; the lymphatics were enlarged. Dr. Wyeth saw the patient on the 7th of August, at which time the eruption was well established. Some of the ulcers, especially upon the nose, looked like lupus; but the history of the case seemed to point clearly to a phagedenic pustular syphilide coming on soon after the constitutional infection. Dr. Wyeth held that the case illustrated the statements of Bumstead and Taylor that a pustular syphilitic eruption was apt to follow a phagedenic syphilitic ulcer, and that the violence of the disease was in many cases proportionate to that of the initial lesion.

Up to the time that he saw the patient, the latter had been taking blue mass in small quantities. Dr. Wyeth put him upon increasing doses of protoiodide of mercury, and, after three or four weeks, his condition began to improve. The strongest proof of the specific origin of the eruption was its response to antisyphilitic treatment. Dr. Wyeth remarked that he considered mercury a specific for syphilis, the same as quinine was a specific for malaria. Nevertheless, many patients who had syphilis doubtless got well without any treatment whatever, and, if it were a matter of choice, he would prefer syphilis to pneumonia or typhoid fever. Still, one could not say that the later manifestations of syphilis might not develop at any period during life.

Dr. LEVY spoke of the importance of building up the constitution of the patient.

The PRESIDENT remarked that he usually gave tonic medicines first, and, if necessary, began the administration of mercury later.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Meeting of September 17, 1884.

A Case of Frühjahrs-Catarrh.—Dr. HOWARD F. HANSELL read the following history: Michael Wood, aged twelve, applied at the Southwestern Hospital, in the early part of July, on account of inflammation of the eyes. His father, who accompanied him, stated that every spring, as soon as the cold weather had gone, Michael's eyes began to grow red. This statement is indefinite, but, as far as I can learn, is strictly true, for its advent is simultaneous with the onset of warm weather, whether it be in March or delayed until May. The eyes slowly grew worse during four weeks, when the acme was reached. The patient should be seen in the middle of the summer; then the disease is at its height, and the eyes present a remarkable appearance. However, the fall is not yet far enough advanced to have obliterated all the characteristic signs of his affection. These peculiarities are described by Arlt in his "*Klinische Darstellung des Auges*," and by Saemisch in von Graefe and Saemisch's "*Handbuch der Augenheilkunde*," in almost the same words. There is an elevation of the edge of the cornea, caused by infiltration of a gray, yellow, pulpy mass. On the limbus or margin are found small, gland-like, solid, light gray, or yellow, somewhat transparent bodies, which appear on the nasal or temporal side, or both together, and slowly encroach on the bulbar conjunctiva. As they grow along the edge, they advance on the transparent part of the cornea, and are sharply lined from it, while they imperceptibly fade into the conjunctiva. They are tough, immovable deposits, and do not yield to the probe. The conjunctiva in pronounced cases has lost its transparency, and its enlarged vessels run into the elevations on the cornea. The color of the conjunctiva differs from that of inflammation, as well as from the normal; it is steamy, dull, pale red, wanting the freshness and liveliness of acute catarrh. This is due to the light serous infiltration of the part.

This condition of the conjunctiva is called by German authors "*Frühjahrs-Catarrh*," and is without a name in English. The title is a bad one, because the affection is not a catarrh, neither does it exist only in the spring. It is a periodic or annual hypertrophy of the conjunctiva and the neighboring section of the cornea. An acute catarrh may be associated with it, as was in this case during part of July. This rapidly disappeared under treatment. The hypertrophy, however, resisted all treatment. For several weeks I kept the eyes under the influence of atropine, and three times each week I applied a crystal of sulphate of copper to the lids without the slightest benefit. Since August 1st the treatment has been stopped. The disease continues to appear regularly at the beginning of warm weather, reaches its maximum intensity in four weeks, and disappears after the first snow, leaving no trace. This is repeated for a period usually of four years, although it may run on many years longer.

Treatment has little or no effect; the only references which I have been able to find are the two mentioned above, although I have searched the works of Stelwag, Carter, Schweigger, Jacobson, and Soelberg Wells.

Dr. E. O. SHAKESPEARE had seen this affection a few times. It was one which he had supposed to be peculiar to the spring of the year, having in mind two cases that had so occurred, but he had seen one which appeared semi-annually. As to the pathology, he was at a loss to form an adequate understanding.

Dr. SAJORS would like to know if there was much pruritus.

Dr. HANSELL said that these cases occurred very rarely in this country. Dr. Harlan, to whom he had sent the case, in his many years of clinical experience at the Wills Hospital, had never seen a single instance of it. Neither had the speaker been able to find any reference to it among American writers. In answer to the question as to its connection with hay fever, I might say that this disease had a different history and pathology, and in the reported cases had been associated with no other affection. It bore a closer resemblance to pterygium than to any other eye disease.

Foreign Body in the Interior of the Left Eye, of Three Years' Duration, causing Sympathetic Ophthalmia of its Fellow; Removal of the Foreign Body; Full Recovery of the Right Eye; Marked Improvement of the Left Eye.—

Dr. M. LANDESBURG said:

I have the honor to exhibit to you, Mr. President, to-night, one of the most interesting cases I have ever had the good luck to meet with in my practice.

This gentleman, forty-one years of age, had the misfortune of being struck by a splinter of metal in his left eye, July 13, 1881, about six weeks after he had come to this country. Blindness set in within ten minutes after the accident. He applied on the same day at the Wills Eye Hospital, where he was advised to have the eye removed at once. Not quite relishing this prospect, he went to the Jefferson Medical College, where he was admitted for treatment after he had refused the enucleation, which was also at first proposed to him. There he remained for six weeks, during which time the incident inflammation passed off entirely. The globe was preserved, but vision was not restored. He enjoyed good health until March, 1882, when the first symptoms of sympathetic disorders began to develop in the right eye. Asthenopic troubles made their appearance, followed by sensitiveness to light and photopsies. The acuteness of vision gradually diminished as well for distant as near objects.

And now he began his wanderings from one oculist to the other; he hardly spared one, if I have to believe his testimony. Nothing was done for the benefit of the right eye, which changed from bad to worse. Enucleation of the left eyeball was pronounced by all authorities as the ultimate ratio by which the condition of "nervous irritation" in its fellow might possibly be checked.

When I saw the patient for the first time, September 5, 1883, I ascertained the following condition: No irritation whatever in either eye. Vision of the right eye was 10-20; with convex 40, 10-15. Pupil of normal shape, but of somewhat sluggish reaction; accommodation is impaired in consequence of paresis of the accommodative muscle. With naked eye patient reads Jaeger 13 at about fifteen inches distance; with the help of convex 10, Jaeger 3 at eight inches. Field of vision and tension are normal. There exists an eccentric positive scotoma, outside of the point of fixation. The subjective complaints are of photopsies and scintillations. Ophthalmoscopic examination reveals no morbid changes. Left eye counts fingers at two feet peripherically outward. The cornea shows a linear horizontal cicatrix on its lower third, running from the outer corneal margin toward the pupillary region. The lower half of the iris is disorganized and presents in its middle a funnel-shaped depression, and close to its temporal border a mound-like elevation. The pupillary margin of this segment of the iris is connected by three blackish filaments with the dense opaque whitish membrane, which stretches across the whole pupillary plane, filling up the latter to the greatest extent, even after the pupil had been dilated by a mydriatic.

The presence of the above-described "*depression and elevation*" in the lower half of the iris, which were situated just

opposite the corneal scar, aroused my suspicion that the foreign body might possibly lay imbedded in this region. An operation for the removal of the foreign body seemed to me to be a matter worth trying at first, by which nothing was risked and everything might be gained. The enucleation of the eyeball I regarded as the last expedient, to which I would resort if I should be baffled in my intentions.

I spoke with the patient to this effect, telling him that I must have full liberty to act according to my best judgment, and to be allowed to enucleate the eyeball if I should fail to extract the foreign body. He took time for deliberation and reflection until May 19, 1884, when he returned in the following condition. Meanwhile he had repeated and completed his circuit among the specialists. Vision of the right eye 10-30; with convex 60, 10-20; complete paralysis of the muscle of accommodation. With the naked eye he reads Jaeger 16 at eighteen inches distance; with the help of convex 10, Jaeger 5 at ten inches. The shape of the pupil is normal, its reaction sluggish. The visual field is somewhat limited in the upper sector, and its outer-upper quadrant is occupied to the greater extent by the eccentric positive scotoma. Patient sees all objects as through a veil, and is greatly annoyed by photopsies and scintillations, and by the perception of a bluish flame, which constantly occupies the center of the visual field. He complains, besides, of the most various abnormal sensations in and around the globe, of a feeling of pressure in the depth of the orbit against the eyeball, of pains in temples and forehead, of sensitiveness to light, etc. The ophthalmoscopic examination reveals venous hyperemia of the retina. Optic disk is pinkish red, of somewhat indistinct tints. The condition of the left eye has not changed.

I operated upon the left eye in the following manner: I made a section at the sclero-corneal border, just within the limits of the morbid changes in the iris, introduced Liebreich's iris-forceps, grasped the whole segment of the iris, which contained the "*depression and elevation*," drew it out and cut it off. No foreign body was found in the excised piece of iris. Now I again introduced a pair of forceps, caught the membrane, which covered the whole pupillary region, and managed to remove it entirely. On inspection, a small oblong piece of metal was found imbedded in the posterior surface of the lower end of the membrane. Considerable hemorrhage followed the operation, and a few drops of vitreous escaped from the wound. A compressive bandage was applied on both eyes.

No reaction whatever followed the operation, and the healing process took place most favorably. The bandage was removed on the third day. When I examined the patient on the eighth day, the condition was as follows: Vision of the right eye, 12-15; with convex 72, 12-12; Jaeger 12 is read at fourteen inches distance with the naked eye. Subjective complaints greatly abated. No photophobia and lachrymation. Scotoma somewhat more transparent. The left eye shows a very fine artificial pupil. The hemorrhage in the anterior chamber is only partly absorbed. Vitreous contains blood and dense floating opacities.

This remarkable improvement in the condition of the right eye had taken place without any other influences having been brought to bear upon it than the extraction of a foreign body. I abstained from all therapeutics during the eight days, and no more forcible proof of the sympathetic nature of the affection can be adduced than the spontaneous recovery after the cause of irritation had been removed.

An alterative and derivative treatment, which I now instituted, had the following effect: Vision of the right eye is at present 12-8. The pupil is of normal reaction, the accommodative paralysis has greatly improved. His punctum proximum is at fifteen inches, and he reads, with the help of convex 10,

the finest print (Jaeger 1) at six inches distance. The visual field is normal and the scotoma has contracted to an oblong rod of about two inches in length and of one eighth inch in diameter. This scotoma is transparent, and does not interfere with vision. All subjective complaints and perceptions have vanished, with the only exception of the bluish flame, which, however, but faintly and only occasionally appears in the visual field. Background of the eye is normal. Vision of the left eye is 1-16, and may possibly improve still more in the future. There still are large floating opacities and some bloody streaks in the vitreous. The background of the eye can only dimly be seen. There are morbid changes in the retina and choroid, due to inflammatory processes which had taken place in these parts.

You have, gentlemen, before you a case in which a foreign body had penetrated into the eyeball, causing traumatic cataract and consequent morbid changes in the uveal tract and retina. The lens is absorbed, and a thick, opaque membrane (secondary cataract) obstructs the whole pupillary region. The foreign body remains imbedded in the posterior surface of the lower end of this membrane for nine months, without doing any harm. Then the right eye begins to show symptoms of sympathetic trouble. Amblyopia and paralysis of the muscle of accommodation develop. And, while these morbid changes of the most serious character take place, no inflammation proper, no objective irritation, can be observed in either eye. The injurious influences, which have continued to work for two years, are checked at once by the removal of the foreign body. The secondary affected eye makes a marvelous recovery, which far surpassed all my hopes and expectations. Such a vision as 12-8 is only met with in very rare instances, and the primary injured eye, which was not considered worth while being preserved, improves to such a degree as to enable the patient, should he have the misfortune to lose his right eye, to find his way in the streets, to recognize faces, to distinguish features, and eventually to gain a living by peddling, etc., if need should be. This case may justly be called a triumph of conservative surgery.

Dr. SHAKESPEARE said this was a case of more than ordinary interest from many aspects, and Dr. Landesberg had rightly called it a triumph of conservative surgery. It was well known that a foreign body might remain in place many months or years before causing sympathetic irritation. The whole case, while an illustration of the benefits of conservative surgery, also showed the advisability of gaining the patient's consent to enucleation, if necessary, before the search was begun. These cases might, however, cause, in the minds of the laity and members of the general profession, erroneous impressions of the absence of danger from foreign bodies in the eye.

Dr. ROBERTS thought Dr. Landesberg deserved great credit for his acumen in supposing that he could remove the foreign body. He always warned patients, who came to him with lost vision from bodies in the posterior portion of the eyeball, of the danger of future sympathetic ophthalmitis, and advised them to have enucleation performed, unless they lived in the portions of the country where skilled ophthalmologists were found. This case would incline him to make exploratory procedures before enucleation.

Dr. W. S. STEWART asked the nature and size of the body.

Dr. LANDESBERG, in closing the discussion, said: I take exception to the practice of all those surgeons who resort, without further delay, to enucleation in instances of injury to the eyeball with loss of vision. In all cases in which there is no foreign body in the interior of the globe, we have to abstain from operative interference, and watch the eye with care. There is no danger in waiting. Sympathetic irritation is not likely to occur immediately after the injury. Enucleation itself is not so harmless as it is generally represented in text-books. It may

sometimes give rise to sympathetic irritation, and I would impress this fact upon the general practitioner. It is not indifferent to the patient whether his blind eye is removed or not. A blind eye looks, in the great majority of cases, better than an artificial one, and we have to give the patient the benefit, so long as it is compatible with the safety of the other eye. It is a matter of aesthetics. If a foreign body has penetrated the eyeball, the first indication is to remove it with an electro-magnet. If it can not be found, and there is traumatic cataract, I would at once remove the latter—the body may be imbedded in it. Should this removal fail, I advise enucleation at the same sitting. The foreign body extracted in this case was about 3 mm. long, and of metal.

The Cure of Crooked Noses by a New Method.—Dr.

JOHN B. ROBERTS read the following:

I present this patient to show the manner in which I treat the very disfiguring lateral deformity of the nose so often seen after falls or blows which have fractured the septum and cartilages. The method is, I believe, original. It is certainly attended with very little inconvenience to the patient, who, after recovering from the anæsthetic, can at once attend to his occupation without wearing any apparatus to call attention to the surgical procedure by which his crooked nose is being made straight and shapely. The usual advice given to patients with deformed noses, from nasal fracture sustained in childhood or later, is to undertake no surgical treatment, but to become reconciled to the disfigurement of feature as best they may. This is, I am sure, improper advice. The cosmetic objection to a crooked nose is cogent; and, moreover, obstruction of one nostril, from the displaced cartilages, is a frequent accompaniment of such lateral deviation of the tip of the nose.

This man sustained, ten years ago, a fall upon his face, from which he recovered with the end of the nose bent to the right, and with considerable obstruction of the left nostril. I operated on him day before yesterday. You see now a straight nose, and nothing to call attention to the operation except a small piece of black court-plaster a little to the right of the nasal bridge. Just within the right nostril close inspection reveals the head of a pin, situated on the side of the septum, near the columella. The method of operation, therefore, is certainly not objectionable on account of making the patient unpleasantly conspicuous during treatment. This evening I merely wish to show the man, and refer to my method of dealing with such cases, because at a later time I hope to bring the subject of curing nasal deformities before the society in a more formal and elaborate manner. Then I may have no patient undergoing straightening of the nose to illustrate the remarks.

Replacement of the deformed structures in this case was very simple. With a scalpel introduced through the left nostril, I perforated the cartilaginous septum at its upper and back part, and made a long incision through it in a direction downward and forward. This permitted me to push the whole cartilaginous portion of the nose to the left and overcome, to a great extent, the lateral deformity. To retain the parts in this position I introduced a steel pin about one and one fourth inch long into the right nostril, and passed it completely through the anterior and upper segment of the divided septum, near the columella. Having the movable portion of the septum thus transfixed, I was enabled, by carrying the head of the pin to the left, to move the anterior part of the nose to the left, and to retain it there by imbedding the point of the pin deeply in the immovable cartilaginous septum and mucous membrane at the back of the left naris. In other words, I incised the deformed cartilage, and pinned it in position very much as you would pin a flower in the button-hole of a coat. There still remained a little deflexion of the end of the nose to the right,

which seemed to be due to malposition of the lateral cartilage close to the right nasal bone. With a tenotome in the right nostril, I pared the cartilage loose, without perforating the skin, and pinned the parts over to the left by a second pin inserted from the cutaneous surface of the dorsum on the right of the median line. The point of this pin was fixed by having its point imbedded in the tissues of the left naris. It is the head of this second pin that is covered by the small square of court-plaster. The correction of the angular deformity of the septum removed most of the occlusion of the left nostril, which had greatly annoyed the patient.

I have thus given an idea of the method which has, I believe, great capability for relieving unsightly nasal deformities. The novelty consists merely in pinning the parts in position until cicatrization takes place. Endeavors have occasionally been made, as by Mr. Adams, Dr. Weir, and others, to hold deflected noses in position, after operation, by the use of clamps, rods attached to the forehead, adhesive plaster, plugs, and similar devices. All of these are objectionable, because so conspicuous and troublesome, and would probably be adopted only in instances of great deformity. The pin method, however, leaves no noticeable scar, is not troublesome to the patient, and is applicable, therefore, even to those slight deformities whose chief annoyance is an æsthetic and cosmetic one. I leave the pins in position for about two weeks.

A few years ago Dr. Mason, of Brooklyn, recommended the use of steel needles to hold the nasal bones in position, when, after recent comminuted fracture, it was difficult to keep the fragments sufficiently elevated. He transfixes the nose below the depressed fragments, and carries a piece of plaster or a rubber band across the external surface of the bridge from one end of the needle to the other. The needle acts as a girder to tie the base of the nasal arch and prevent its falling in. This is a different use of the pins or needles from that which I am describing, and for a different purpose.

I have pins of lengths varying from one inch to two and one fourth inches, and with flat heads, so that there will be little projection under the court-plaster to attract attention when the patient is in public. The heads are square, that the pins while imbedded may be, if necessary, readily rotated by the fingers.

When the deformity is in the osseous portion of the nasal bridge, section with small chisels is usually necessary. Discussion of this topic, however, would carry me beyond the limits of the present subject.

Free incisions are essential in obtaining good results in cases of nasal deformity such as was exhibited by this patient. The surgeon must not spare the knife and thereby spoil the nose. Secondary operations may sometimes be required to get the best results. If a simple incision did not allow proper adjustment, I should excise portions of the cartilage with the oval punch or the scalpel, or make multiple stellate incisions with the stellate punch, and so produce general flexibility of the cartilage.

Recurrence of deformity would, I think, be less likely to occur after free incision, pinning, and cicatrization, than after simple dilatation, with or without incision with the stellate punch.

Dr. JUIST had been so unfortunate as to operate in a few cases of divided septum, but had generally found that after two or three months the septum returned to its former position. He hoped Dr. Roberts would state whether in his cases it remained permanently straight.

Dr. ROBERTS said that, if free incisions were made, the deviation ought not to return. If, after operation, the parts were held in place two weeks, the chances were that they would remain in the new position as surely as after the original accident.

Dr. JURIST would not like Dr. Roberts to understand that he did not fracture the septum. He did so in all cases—using the stellate punch—and did not rely simply on a plug.

Notes on a Case of Poisoning from Mrs. Winslow's Soothing Syrup.—Dr. A. B. HUSSIN read the following:

With the object of adding my quota to the list of serious accidents resulting from the indiscriminate sale of secret medical preparations, I have gathered the notes of the following case:

Mrs. A. H. L. took her twenty-months-old boy to visit some friends, and, while there, they (all unknown to her) fed him some unpeeled apple and other indigestible material. Being colicky all that night and next morning, she was persuaded by a "friend" to purchase a two ounce phial of the nostrum sold as "Mrs. Winslow's Soothing Syrup," and of this gave him half-teaspoonful doses, as the directions called for, although she insists half of each quantity was spilled through his struggling.

He took, therefore, the first dose at four o'clock on Sunday afternoon (August 24th), and, there being no effect, another at eight; then dozing but not sleeping from this time till three next morning, the pain starting him again to whining, he was dosed at five; still crying on, three quarters of an hour later the final similar amount was administered. The mother soon became alarmed at the marked stupor which had now set in. He would touch none of the breakfast placed before him, Mrs. L. said; although sitting upright in his high-chair, his head hung listlessly, and he recognized nobody.

I saw him at 7.45 A. M., and found marked symptoms present of poisoning by some narcotic drug. The pupil was contracted down to the typical pin-head; stupor was unmistakable; respiration was very slow, gasping, and shallow, while at irregular intervals he would take two or three rapidly succeeding deep sighs; the pulse was rapid and small; the extremities were cold throughout the case. Taking all these symptoms into consideration, and the fact that the breath bore the peculiar odor of an opiate, I felt warranted in treating the case for one of poisoning by some preparation or derivative of that drug.

The stomach and bowels were emptied at once; frequent cold sponging was ordered, with wet cloths placed on the nape of the neck whenever great trouble existed in keeping him awake. Tincture of belladonna was given hourly with water. The parents were directed to keep him awake by all means.

By noon he would begin to lift the eyelids a little, but relapsed into a sort of doze by 2 P. M. Despite all their efforts, he fell once more into a stupor by six. Calling about this time, I insisted on the mechanical exercises being continued, feeling encouraged by the somewhat improved breathing, and I succeeded a little while later in arousing him. As the pupil had now slowly begun to dilate, the medicine was ordered to be given every half-hour, or twice as often as before. By eleven he began to lighten up, and, on calling half an hour later, I found him languidly trying to push his ball around the table upon which he sat; the pupils were widely dilated, and respiration was free. He was allowed to sleep, with slight interruptions, from midnight until 6 A. M., after which he showed his great thirst by frequent demands for ice-water. Incoordination of the voluntary muscles now became noticeable, and continued until next morning. A typical belladonna rash was now likewise beautifully shown, also to disappear in time. He slept for two hours about noon, being exceedingly irritable afterward, but, excepting the use of a tonic, required no other treatment.

As stated in the beginning of the notes, this case is merely placed on record to help expose an existing evil, believing that continuous agitation will finally induce the intelligent public to demand the regulation of the sale of patent medicines, a fact concerning which there never was any doubt in the profession.

A fatal result would inevitably have occurred here had no treatment been instituted, and I feel convinced that many such cases happen in our midst which should be reported; incidentally conversing with both Dr. Schoales and Dr. Blackwood, I heard of such occurring in their respective practices, and should be glad to hear more fully of them from those gentlemen.

The case is the more pertinent at this time when any fakir or shop-keeper may legally retail unlabeled poisons in the guise of patent medicines, while one of our inconsistent laws is now being so interpreted as to inform the patient that, in very many cases, his doctor has prescribed him medicine containing poison.

Dr. JOSEPH D. SCHOALES remembered a similar case, in a child sixteen months old, with which he sat up a whole night. It recovered under a treatment for opium narcosis. In another child, five months old, the symptoms resembled those produced by a teaspoonful of laudanum. Fifteen drops of the syrup had been given. Neither case resulted in death.

Dr. HUSSIN recalled a case in which trouble and annoyance had arisen from a physician's prescription being marked "poison" by the druggist. This occurred after the recent fiasco in which such notice was ordered in each case by the coroner's deputy, an interpretation of the State poison law since reversed by the court. An explanation was necessary before the patient consented to take the medicine and to continue with the physician.

Miscellany.

THERAPEUTICAL NOTES.

Hypodermic Injections of Strychnine in the Treatment of Paralysis.—Dr. Galicier, of Versailles ("Moniteur de thérapeutique"; "Bill. gén. de thérapeutique"), states that strychnine injected hypodermically in cases of paralysis produces a local as well as a general therapeutic effect. The local effect is manifested more or less quickly according as the power of the muscle is completely abolished or only more or less impaired; in from one to five minutes in the latter case, and in from five to twenty minutes in the former. Sometimes, but rarely, the action is delayed until the second or third injection. In the latter case, the power of motion acquired does not at first last from one day to another, but a series of injections is necessary to fix it. The general therapeutic effect is shown progressively after a series of injections, and there is nothing special about it.

From a therapeutic point of view, then, strychnine by hypodermic injection acts like electricity in paralysis—an analogy long since known in general terms: it isolates muscular action and decomposes the motion—in a word, after the manner of electricity, it is an analytical agent in its local action, and a synthetic agent in its general action. These two effects combined act in concert in the cure of paralysis. Like electricity, strychnine encounters resistance on the part of certain limbs, and these are the same in the two instances.

The Treatment of Cold Abscesses by Injections of an Ethereal Solution of Iodoform.—Verneuil's method, as described by the "Revue de thérap. méd.-chir.," consists in injecting into the cavity of the abscess, previously emptied by aspiration, a one-to-twenty solution of iodoform in ether. The quantity of fluid injected may reach three hundred grammes without causing any symptoms of poisoning. This method is said to give very satisfactory results, and to be quite free from danger; the injections can be repeated if necessary.—*Brit. Med. Jour.*

The Action of Salicylic Acid on the Respiration in Typhoid Patients.—The Paris correspondent of the "British Medical Journal" writes to that journal that M. Bochefontaine concludes from experiments that salicylic acid has a favorable influence on the respiration in typhoid patients, restoring the normal amplitude and rhythm of the movements, and thus allowing hæmatisis to regain its lost activity. In healthy animals, submitted to the influence of the drug, the inspira-

tions are prolonged at the same time that the temperature is reduced, and the same correlation holds good in typhoid patients—after doses of from five to six grammes, their temperature falls rapidly, and at the same time the respirations become normal. This action of the salicylic acid can not be attributed to a modification of the blood. Experiments have demonstrated that the quantity of the drug which enters the economy after being absorbed by the stomach does not have this effect. The heart is not affected either by the acid or by salicylate of sodium. Experiments made on animals with poisonous doses prove that this organ preserves its movements; even when the muscular fiber and the ganglia cease to perform their functions, *rigor cadaveris* sets in. It has also been demonstrated that non-toxic doses act on the nerve-centers. M. Bochefontaine took three grammes of the acid daily, one half at noon, and the other half at night. Each time that he repeated the dose he was unable to walk, from a feeling of fatigue. If he sat down, this sensation disappeared, and his condition was perfectly normal. He concludes that, in non-toxic doses, salicylic acid acts, in man as in animals, on the medulla oblongata, and that its regulating effect on the respiration in typhoid patients is due to its action on the respiratory center of the medulla.

The Buffalo Lithia Water.—Dr. M. H. Houston, of whom the editor of the "Virginia Medical Monthly" says that he is well known to the profession in that part of the country for his valuable contributions to medical literature, and for a ripe experience and careful habit of recording facts which add weight to any statement coming from him, writes to our esteemed contemporary as follows:

"The remarkable medicinal properties of these waters should be more generally known to the members of the profession in every part of the country.

"These springs belong to that rare class of mineral waters which, without any very sensible qualities to distinguish them from ordinary water, yet exert a quiet and mysterious influence over the animal economy, which, in many cases, is as wonderful as it is gratifying. There is nothing in the analysis of the water which exists in quantity sufficient to account for its peculiar action. The remark applies more forcibly to this class than to most mineral-waters. It may be said, however, of all mineral-waters, that analysis can never reveal the combinations upon which their efficacy depend. In fact, the very process of analysis may break up combinations, formed in the laboratory of nature, which the best skill of the chemist can never detect, and which may impart to them their most valuable properties.

"Having had an opportunity of watching very closely the action of the lithia water, in numerous cases which have fallen under my observation, I am prepared to impute to it one quality at least, to which, it strikes me, sufficient attention has not been heretofore directed. I allude especially to its power as a gentle excitant to the nervous system, and as a *powerful and permanent nerve-tonic*. To this peculiar property I am disposed to attribute much of its efficacy in the relief of many chronic diseases. Other mineral-waters, with exhilarating properties, are sparkling in their appearance, and their exciting qualities are due to the gases which are disengaged, and which are, consequently, evanescent in their effect. The lithia water is without such impregnation of gases, and its effects are much more permanent.

"In a case under my immediate observation, in which there was congestion of the mucous membrane of the fauces, œsophagus, and probably of the stomach, accompanied by extensive and very painful hyperæsthesia of the whole skin, its effects were very remarkable. A full goblet of the water of Spring No. 2, taken about eleven o'clock, was followed, in a few minutes, by a sensation described as a *lightening up of the whole system*, as though a load had been removed from it, and an almost entire cessation of numerous neuralgic pains in different parts of the body. There was none of that exhilaration of the brain caused by alcohol in any of its preparations, or by any other mineral water that had ever been tried. The result was manifested too soon to be accounted for on any other supposition than that it acted directly on the nerve-filaments of the stomach, and through them, by reflex action, on every other part of the system.

"It may be remarked here that hyperæsthesia generally may result from two opposite conditions of the nerve-centers: one of active, and the other of passive congestion. Active congestion or inflammation is

attended with exaltation of nervous sensibility, while passive congestion is the result of depressed nervous energy, with *perverted* sensibility. When not the result of organic disease, a large majority of the disorders of the digestive organs are caused or accompanied by the latter condition; and it is to its immediate effects upon this perverted sensibility that I am disposed to attribute, to a great extent, the salutary effects of the water. Its direct impression on the nerves of the stomach is the first important link in the chain which connects it with the gradual improvement produced in the other organs of the body—and this improvement is rendered permanent by its nerve-tonic power. This peculiar property of the water would seem to indicate it as peculiarly applicable to those forms of paralysis caused by pressure upon the cord, from passive congestion or serous effusion. In this class of cases all remedies, including galvanism, are, more or less, necessarily tentative, but I have no hesitation in advising its use, especially in cases of long standing.

"Add to this nerve power its impregnation with alkaline salts, and you have a combination especially adapted to the relief of that large class of disorders of the digestive organs, accompanied with passive congestion of the mucous membrane, with perverted sensibility; or, as they were graphically described, about fifty years ago, by the celebrated Dr. James Johnson, under the head of 'Morbid Sensibility of the Stomach and Bowels.'

"The impression made upon the nerve-filaments is communicated, by contiguity, to the blood-vessels in their immediate neighborhood, and the organic contractility thus acquired relieves them gradually of their accumulated contents; while, by reflex action, the same effect is produced, more gradually, on the mucous membrane in every part of the body; the appetite is improved, and with it the power of digesting the contents of the stomach. Its direct action on the liver is probably very limited. The functional disorders of this much slandered organ are due, in a large majority of cases, to irritation and inflammation of the duodenal mucous membrane, conveyed by direct sympathy, through the gall-ducts, to the body of the organ. The cause being removed, the liver returns gradually to the performance of its proper functions, and adds its healthy products to the completion of digestion.

"Its effects in improving and restoring the organic sensibility of the entire intestinal track were strikingly illustrated in one of the cases under my immediate observation, in which there was almost entire paralysis of the rectum. The rectum itself was distended into a sac, in which fecal accumulations took place to an extent that rendered it necessary to use mechanical means for their removal. Under a continuous use of the water, the sensibility was restored to a considerable extent; tonic contraction of the distended bowel took place, and its contents were expelled, with very slight assistance, from the use of simple water. Indeed, as far as any cathartic effects are concerned, they are due more to this restoration of organic sensibility along the whole track of the intestinal canal than to any drastic effect upon the blood-vessels.

"As an alterative and diuretic, its composition would indicate it as peculiarly appropriate. By reflex action it operates, in the same manner, on the irritated mucous membrane of the bladder, though more slowly than it does when applied directly to the mucous membrane of the stomach and intestines. A single case brought to my attention will serve to illustrate this principle. A gentleman, far advanced in years, labored under an irritation and inflammation of the neck of the bladder so extreme as to render it necessary for him to make efforts to relieve it from twelve to twenty times during the night. Under the use of the water the relief was so complete as to render it necessary for him to rise only once, and often not at all, during the night. As far as known, the relief thus afforded has been permanent.

"The foregoing remarks on the *modus operandi* of the water are derived mainly from observations made with the use of the bottled water from Spring No. 2. It can scarcely be doubted that they will apply with more force to the use of the water at the fountain-head.

"Spring No. 3, if it contains the same nerve-tonic as Spring No. 2, has also an increased quantity of iron, which would constitute it a valuable blood, as well as nerve tonic, in those numerous anæmic conditions usually met with in female diseases.

"It is not to be expected that in organic disease of any kind, and especially in those of a malignant character, a cure can be effected;

but it may be safely said that in many, even of such cases, it will be found a most valuable palliative.

"What has already been said will designate, to every intelligent physician, its useful applicability to a variety of other affections which need not now be enumerated. In this connection it will be proper to enter a caution against the too free use of the water under any circumstances. Being highly medicinal, it should, like all other important medicines, be administered, as far as practicable, under the advice of some judicious physician, who, from observation, has become familiar with its properties. If taken too freely, like all water, it will produce some sense of oppression of the stomach, and, moreover, a sense of constriction about the head, which is neither comfortable nor desirable. From all that has been said, I must conclude that, as a medicinal agent, this water has properties which render it quite equal, if not superior, to any mineral-water of which I have any knowledge."

A Classification of Urethral Applications is given by M. Mallez ("Rev. de théráp.," "Rev. méd.," "Gaz. hebdomadaire des sciences médicales de Montpellier") as follows:

Irritant injections.	Caustics.	Nitrate of silver.
		Bichloride of mercury.
		Caustic potash.
		Iodine.
Non-irritant injections.	Astringents.	Iodide of potassium.
		Protiodide of iron.
		Acetate of lead.
		Sulphates.
Antiseptic injections.	Detersives.	Lactate of zinc.
		Tannin.
		Catechu.
		Pure water.
	Protectives, or absorbents.	Red wine.
		Aromatic wine.
		Alcohol.
		Distilled water of cubebs.
	Anodynes.	Distilled water of copaiba.
		Distilled water of eucalyptus.
		Starch.
		Subnitrate of bismuth.
	Irritants.	Carbonate of lime.
		Various emollient decoctions.
		Opium, laudanum.
		Belladonna.
	Detersives.	Phenic acid.
		Protocloride of tin.
		Carbolized water.
		Chlorine or chlorides in water.
	Pure antiseptics.	Tar-water.
		Permanganate of potassium.
		Borax.
		Sulphite of sodium.
		Sulphite of silver.

Sanitation and the Rag Trade.—The limitations put upon the importation of rags, for the purpose of protecting the country against the introduction of infectious diseases, having been taken by the importers as an unnecessary hardship imposed upon them, the Washington correspondent of the "New York Herald" has been at some pains to get at the real position taken by the Government in the matter, and he reports that Surgeon-General Hamilton, of the Marine-Hospital Service, spoke to him as follows:

"In regard to the opinion of those able sanitarians, the rag importers, on the contagion or non-contagion of their wares, I am willing to admit the entire disinterestedness of their opinion on that subject, and also to admit their acknowledged ability as sanitary experts. I, however, must dissent from the opinion of even so useful a body in their statement that rags are all thoroughly disinfected either before or after shipment. The contrary is the fact.

"So far as the alleged good health of persons handling filthy rags is concerned, it must be placed on a par with the alleged good health of the workmen in the Paris sewers, who are also said to be quite healthy.

I do not believe, however, that the advocates of racial longevity would recommend a residence in the sewers or the handling of old rags for the purpose of prolonging life.

"Seriously, though, there is such a thing as the securing of immunity from certain diseases, known to be infectious, by constant exposure. Such immunity is also secured from the operation of certain poisons.

"So far as the burden of proof whether a given cargo comes from an infected district or not is concerned, in my judgment that burden should not be thrown upon the Government, but upon the importer. It is not sufficient that the rags shall have been shipped from a healthy port. It must be known from what sources they were originally gathered.

"The statement is made in the 'Herald' interview, to which you call my attention, that the public is misled as to the disinfection of rags previous to their shipment. That has been done in but a single instance, so far as I am aware, and that is the instance cited in the official memorandum. This Government is not alone in its regulations concerning the importation of rags, for importations are prohibited in Russia, Germany, Canada, Belgium, Italy, and Spain, and in England from infected localities.

"The suggestion has been made that the manufacturers are simply putting up their prices of paper on a pretext that there were already large stocks of paper on hand when the prohibition order was issued, and that paper which was not made from rags had been increased in price at the recent meeting of manufacturers. This office, however, is entirely uninfluenced by any such considerations. The question of a central disinfection warehouse in this country is one that may be acted on at the next Congress, at least the question will be distinctly submitted to them, and the present agitation can only result in the better security to the public health, either by disinfection of the suspected cargoes abroad or at home. The experiment of the Seymour Company proved that the expense of disinfection abroad was not an insurmountable one. In point of fact, the operation of boiling and drying the rags, which was adopted, might be considered one of the preliminary processes of the manufacture of paper, for the rags were thoroughly cleaned and freed from dirt at a comparatively trifling expense."

Melanuria.—Among some of the most interesting phenomena of physiological chemistry are the conditions of the urine as regards its colored constituents. As is well known, the pigments of urine are not all visible when that fluid is first passed—e. g., the presence of indican requires chemical manipulation for its detection. Zeller has recently observed a rare case of melanuria in a man aged forty-three, who was the subject of multiple melanotic sarcomata of the skin, and who died, six weeks after he was admitted to the hospital, of cerebral complications. The urine was of a brownish-yellow color, absolutely clear, of a density of 1020–1030, free from sugar or albumin. Chemical analysis showed a slight increase in the amount of sulphuric acid discharged; phenol and indican were of normal proportions, but the quantity of hydrobilirubin was largely augmented. There existed a constant relation between the black coloring matter and the bilirubin in the sense that when the urine was light-colored the more urobilin it contained, and the less melanin it had; the darker the urine the more melanin it yielded, and the less urobilin. Bromine-water gave an abundant precipitate, yellowish and amorphous, but, on resting, this changed spontaneously to black. The test with bromine proved to be more sensitive than that obtained with nitric acid or chromate of potash. The precipitate of bromomelanin appeared in the dry state as a brilliant black solid which became a brown powder when triturated. The bromine-reaction distinguishes melanin from urobilin, which gives with bromine water a yellow precipitate, not, however, passing into black when left to stand; so that normal and febrile urines do not give the black precipitate when treated with bromine-water. Zeller believes that the urinary pigments proceed from two sources, the one being the coloring matter of the bile or blood, and the other aromatic substances developed in the intestine during the process of digestion of albuminoids. It is probable from his observations that melanin is derived from the latter source, though the want of further investigation is admitted.—*Lancet*.

Lectures and Addresses.

OBSERVATIONS

ADDRESSED TO THE STUDENTS OF
BELLEVUE HOSPITAL MEDICAL COLLEGE

AND THE

MEDICAL DEPARTMENT OF THE UNIVERSITY OF THE CITY OF NEW YORK,*

THURSDAY, SEPTEMBER 25, 1884,

By W. S. PLAYFAIR, M. D., F. R. C. P.,

PROFESSOR OF OBSTETRIC MEDICINE IN KING'S COLLEGE, LONDON; LATE PRESIDENT OF THE OBSTETRICAL SOCIETY OF LONDON, ETC.

GENTLEMEN: My friend, Professor Lusk, has asked me to address a few words to you, and I feel too much indebted to him and to the many other kind friends who have given me so cordial a welcome on this my first visit to your great country, to hesitate a moment in complying with the suggestion he has made to me. At the same time, you must permit me to say that the last idea I had in my mind, in my visit to the United States, was that of appearing in any sense as a teacher. My object, if I had one beyond that of taking my annual vacation, was rather that of making myself again, in a degree, a student. I was desirous of seeing and studying your many valuable institutions, and of learning some of the lessons which a country so rapidly progressive as this is well capable of teaching to a traveler from the Motherland. In this I have certainly been amply successful. I feel that it is quite impossible for an Englishman to travel in the United States without acquiring knowledge which certainly ought, if properly assimilated, to be of much value to him. Professor Lusk, however, obviously did not ask me to address you with the view of eliciting my general impressions of American travel, so I shall say no more on this topic, but rather occupy the brief time I have at my disposal with some general remarks on the department of practice in which we are specially interested—viz., obstetrics and gynecology. I regret, however, that I had not the remotest conception that I should have the honor of addressing this large and important meeting which I see before me. Had it occurred to me that such an assemblage was possible, I should have endeavored to prepare myself more fitly for the occasion by getting ready an address on some special topic, which might have been, perhaps, more worthy of such an audience; but, not having had the opportunity of doing so, I can only crave your indulgence for the few scattered observations I can now make.

I have always been struck, in my general studies, with the fact that obstetrics and gynecology seem to be cultivated, on the whole, with more energy in your country than these subjects are with us, at any rate of late years. It is true, I think, that the first great start in what I believe to be one of the most progressive branches of medicine was due to the energy of my late honored master, Sir James Simpson, who, by his numerous researches and papers—per-

haps even more by his indomitable "vis viva," which one must have known to thoroughly appreciate—gave an impulse to the study of the subject which is felt to the present day. If any of you have the curiosity to look back to any of our standard works on gynecology antecedent to his time—say, for example, to the treatise of the late Sir Charles Mansfield Clark, who, some forty years ago, was *facile princeps* the leading gynecologist in England—you will readily understand how much the subject has advanced since that comparatively recent date, for you will not find in it any mention of such topics as the speculum, the uterine sound, flexures, or hæmatocele—so that what is now the very alphabet of gynecology was then unknown.

Since that time we have had some great advances in our country of which we have just reason to be proud—such, for instance, as the familiarization of the profession with ovariectomy and other branches of abdominal surgery in consequence of the labors of Spencer Wells and others, although in this connection we must not forget that the operation had long since been performed by your own Ephraim McDowell, of Kentucky, albeit he was not successful in popularizing it as a regular and every-day resource. Since then, however, although much attention is now paid to these subjects in Great Britain, and although we have many able practitioners who devote themselves zealously to its advancement, I can not but feel that it does not receive with us the attention which its great importance merits. Of course, there are many of my brethren, especially those whose professional pursuits are in other directions, who would not agree with me in this statement; if, however, you consider what an immense amount of the ordinary every-day work of the practitioner is in connection with midwifery and the diseases of women, how largely the health and happiness of whole families depend on an intimate knowledge of these subjects on the part of the medical attendant, you will probably agree with me that it is difficult to exaggerate their importance. Now, one of the reasons why, in Great Britain, those who are interested in these branches have good grounds for complaint, is one that I have always been preaching about, in season and out of season, on the other side of the Atlantic, and that is the absurdly inadequate time that is devoted to the teaching of obstetrics in our medical curricula. In every one of our metropolitan schools the course of midwifery is for three months only, and that is supposed to include teaching in gynecology and the diseases of children also, while the cognate subjects of medicine, surgery, and the like, have full courses of six months, besides abundant opportunities of clinical instruction by lectures and otherwise, which are denied to obstetric teachers. All this is the result of the survival of old prejudices, and undue dislike to what is supposed to be new and advanced, which is perhaps inevitable in an old country such as ours. Against such absurdities a constant battle has to be fought, and it is to be feared not always a very successful one, although, doubtless, much ground has been gained. In the mean time, however, there is a risk of the country being flooded with practitioners who leave their schools profoundly ignorant of departments of practice which but a

* From manuscript kindly prepared by Professor Playfair.

short experience of every-day work proves to them to be of vital moment, and which they subsequently have to acquire at the cost of much labor to themselves, if not of precious lives which have been intrusted to their care. In this respect you are, so far as I have had opportunities of seeing, distinctly in advance of us. The same amount of time, the same amount of teaching, is given to this as to other topics, so that if any of you gentlemen should chance to leave your school in comparative ignorance, the fault may possibly justly lie with you, and not with your teachers.

Then another great drawback we gynæcologists have to deal with in England is also an antiquated survival which hampers many of us sadly, and that is the old-fashioned distinction which we have between physicians and surgeons, and the idea that it is beneath the dignity of the former to handle a knife, or resort to any sort of operative procedure whatever. Most of our London hospitals are very ancient institutions. Many of them were in active operation before Christopher Columbus was born or America heard of, and their staff and organization to this day remain very much as they were at the time of their foundation. In bygone days, of course, midwifery was entirely practiced by ignorant women, and gynæcology was unknown. So it happened that the staff was composed of physicians and surgeons only, the obstetric physician coming in afterward as a sort of interloper, who was "neither fish, fowl, nor good red herring," and who to this day in some of our leading hospitals is not recognized as being on a footing of perfect equality with his colleagues. When the advancement of science rendered it necessary for him to perform surgical operations, the surgeon stepped in and said: "No, this gentleman is a physician; he must not operate." And so it chanced that at this moment there are only two large hospitals in London, one of them being happily my own, in which the obstetric physician is allowed to perform ovariectomy, perineorrhaphy, or any other surgical procedure. Now, I ask any reasonable man, How is it possible that gynæcology can make proper progress under absurd restrictions such as these? Gynæcology is as much surgical as medical, probably a great deal more so; and the modern gynæcologist who may not handle a knife is very much like a modern soldier who is prohibited from using gunpowder. Here, again, you have decidedly the advantage of us. You have no such old-world prejudices to deal with, and your physicians may be surgeons, or your surgeons may be physicians, just as much or as little as their individual tastes may prompt them to be. Hence it comes, to some extent, I think, that your lines are cast in some ways in more pleasant places.

When I reflect on what American gynæcologists have done, it is impossible not to be obliged to congratulate you on your good position. To Marion Sims we owe it that vesicovaginal fistulæ no longer cause life-long misery to those so unhappy as to suffer from them; to Emmet we owe the introduction of trachelorrhaphy and the recognition of laceration of the cervix as a common lesion and a fruitful source of uterine disease—a recognition as yet to a great extent limited to this country, since, when I introduced the topic to the Obstetrical Society of London, I failed to obtain for it anything like the attention its importance merits; while

to Battey, of Georgia, we owe the removal of the uterine appendages in certain cases of long-standing disease. I could point to other indications of the active interest taken in these subjects in America, notably to your valuable monthly "Journal of Obstetrics," full as it is of important matter, and to your "Gynæcological Transactions," while in London, with sorrow I say it, the one little obstetrical journal we had died, after a brief and troubled existence, from inanition.

Gentlemen, it struck me, when called on to address you, that it might interest you to learn something of our difficulties in England, and to know how we are interested in the progress of obstetrics—have to fight against certain discouragements. Perhaps, or at least let us lay the flattering unction to our souls, our record under the circumstances is not altogether so bad as might have been anticipated. I have alluded specially to three great modern improvements emanating from American gynæcologists. The first of these is now a matter of history. Marion Sims has unhappily passed from among us, and this portion of his work, and his name in connection with it, will be remembered and honored so long as surgery exists. The two others are still fruitful subjects of discussion, and there is some similarity in their present status from which, I think, useful lessons may be derived. The lesson I would venture to teach from these is that undue enthusiasm, over-riding of a favorite hobby, always harms what may be a good cause, and so really retards, instead of promotes, true progress. Some of my professional brethren in America, I have reason to know, feel somewhat aggrieved, and I think not without reason, that the work done on this side of the Atlantic, with regard to traumatic lesions of the cervix, their effects, and their cure by operation, has never been fairly taken up and studied in England. The facts I believe to be undoubted, and not to our credit; the reason, I think, is not far to seek. No one can accuse me of this fault, since I believe I was the first to perform trachelorrhaphy in Europe. I have long since recognized its value, and brought it before the profession, and I have the reputation at home of being a thick-and-thin supporter of the operation; so I will assume the position of the "d—d good-natured friend" and point out to you that the prejudice against the operation may, I think, be traced to the undue enthusiasm that it excited here, to the suspicion that it was resorted to in many cases unnecessarily—in fact, to riding the hobby too hard. Things are certainly righting themselves here. Surgeons are everywhere beginning to recognize the fact that all lacerations of the cervix do not require to be operated on, and I do not doubt that before long the value of this operation will be properly estimated on both sides of the Atlantic.

The removal of the uterine appendages stands, just now, on much the same platform, although, curiously enough, the hurtful enthusiasm of some of its advocates is of English, not of American growth. This topic has lately been the subject of an address delivered at Montreal by my countryman, Mr. Lawson Tait, which has been published in your medical press, and has been much commented on. With regard to Mr. Tait's purely professional views I have no criticism to make

at all. On the contrary, I believe him to be doing a considerable work, to be pointing out a real advance, and I am, in the main, a believer in it. I have only to say, with reference to it, what I have already said to him elsewhere, that I think his work is and has been retarded, as I have pointed out that trachelorrhaphy has been here, by injudiciously hard riding of a favorite hobby. But, as the first Englishman who has addressed an American audience since that address was delivered, I do feel impelled to protest against what I can not but think was the unhappy spirit that pervaded it, especially the invective on names honored all over our country. In England for any one to say a word in defense of Sir Spencer Wells's position would be absurd; when, however, it is broadly insinuated in America that his title and his honors have been gained on false pretenses, it may be well to assure you that probably Mr. Tait stands alone among Englishmen in holding that view. That Sir Spencer Wells's record may have been surpassed of late is probable and natural as science advances; if it be so, it does not deteriorate one whit from his merits as a pioneer. Gentlemen, the world is never wrong in its estimate of its great men, and if nine hundred and ninety-nine men tell you that Sir Spencer Wells is a great man and an eminent surgeon, and one man tells you he isn't, "you bet"—if I may be permitted to use a local phrase—that the nine hundred and ninety-nine are right and the one is wrong. I can hope for no worse condemnation of my countryman's address on this point than that it should be as severely animadverted on at home as I have heard it here by some of your highest authorities.

And now, gentlemen, I must bring these disjointed remarks to a close. If I have had to conclude that you are in some respects better off than your British relatives, you will, I am sure, not suppose that I intended to please you with honeyed words. In case you should, I may conclude with the reminder that, if you have such facilities in the study of these important topics, if you have the example of so many of your distinguished gynecologists to follow, these advantages carry with them corresponding responsibilities, and of these, I trust, you will never be unmindful.

Original Communications.

ON THE PARASITIC DOCTRINE OF EPIDEMIC CHOLERA.*

By AUSTIN FLINT, M. D.

MR. PRESIDENT AND FELLOWS OF THE NEW YORK COUNTY MEDICAL ASSOCIATION: What is the present status, as regards our actual knowledge, of the parasitic doctrine of epidemic cholera? Have the researches of Robert Koch and others shown this disease to be dependent on the presence of a particular microbe or micro-organism? In other words, has epidemic cholera been proved to be a parasitic disease?

* Read at a stated meeting of the New York County Medical Association, October 20, 1884.

In order to discuss and decide upon these questions, it is by no means essential that we shall have practically verified the microscopical examinations on which rests the evidence of the parasitic doctrine. In courts of law, the judges, advocates, and juries are not themselves observers of facts involved in cases on trial. They deal with facts as established by testimony. So it must be with scientific facts. They are to be canvassed, and either accepted or rejected on the statements of competent witnesses. Were it otherwise, very few of those interested in the developments of science would be qualified to judge of their validity. With regard to the micro-organism which, as it is claimed, is the essential cause of epidemic cholera, an opportunity for personal investigation is not, and, as we may hope, will not, be offered in our own country. Were the opportunity to be offered, how few have the time and patience, added to the knowledge and skill to be acquired only by proper training and practice, to conduct microscopical observations! When in London during the past summer, I visited the Biological Department of the Health Exhibition at Kensington Gardens, and I saw there a specimen of the so-called cholera bacillus. It had been prepared by Koch himself. The demonstration was interesting, but it would be absurd to claim therefrom any advantage in judging of the merits of the doctrine which assumes that this organism is the essential cause of epidemic cholera.

As a preliminary inquiry, let me ask, What is the status of the parasitic doctrine irrespective of any facts relating to the discovery of micro-organisms in cholera, or even in any other disease? It is logically certain that the diseases now classed as infectious diseases involve each a distinct specific causative agent of some kind. That this agent is a living organism is the most rational supposition. The so-called "germ-theory" offers the only possible explanation, with our present knowledge, of clinical facts pertaining to the history of infectious diseases—to wit, the production within the body of the different contagia, and of certain morbid miasms outside of the body, the periods of incubation and the definite duration of these periods, the self-limitation of these diseases, and the different laws which they respectively observe as to the length of their career. Many years ago the late Registrar-General of Great Britain, Dr. William Farr, classified the infectious diseases under the name "zymotic," and this term was generally adopted in England and in our country. Now, *zymosis* signifies fermentation, and the appropriateness of the name consisted in the reasonableness of the doctrine that the so-called zymotic diseases involve a morbid agent of the nature of a ferment. Since the introduction of that term into medical nomenclature, thanks to the genius of Pasteur, fermentation has been shown to be due to the presence of micro-organisms. The different ferments are different bacteria. At the present time the term zymotic implies the germ-theory as applied to the diseases thus designated.

It is therefore noteworthy that the discovery of micro-organisms as causes of infectious diseases, so far from being in opposition to previous opinions, is, in reality, a confirmation of the prevailing views of the aetiology of these diseases. And it is a fact, which in this country should not

be forgotten, that one of our eminent teachers and writers, the late Professor J. K. Mitchell, anticipated the confirmation of the germ-theory in a most ingenious and able monograph, entitled the "Cryptogamic Origin of Diseases," published nearly half a century ago. Mitchell's work, at the time of its publication, was regarded as more fanciful than rational; but the developments of the microscope within the last few years have shown that the author was gifted with a remarkable foresight.

Let me premise another consideration. At the present time there is no room for doubt as to the dependence of certain infectious diseases on specific micro-organisms. It is enough for my present purpose to assume this fact as applied to but a single disease, although the fact in reality holds true with regard to several diseases. Now, if it be demonstrated that any one of the infectious diseases is caused by a specific parasitic organism, is it not a rational inference that the remainder of these diseases have a similar causation? Reasoning by analogy, as it seems to me, we are warranted in concluding, logically, that all the infectious diseases are parasitic, and it remains only to demonstrate the particular parasite which stands in a causative relation to each of these diseases.

I come now to the inquiry as to the knowledge acquired within the past few months, chiefly through the researches of Koch, of the parasitic doctrine of epidemic cholera.

As is well known, shortly after the outbreak of cholera in Egypt in 1883, a scientific commission, with Koch at its head, was sent to that country by the German Government to investigate the disease. Subsequently the commission visited Calcutta for the same object, and more recently Koch has studied the disease at Toulon, in France. The different stages of progress made in the investigations were communicated to the German Government in a series of reports, of which a summary is contained in an address by Koch at a meeting of conference held in Berlin, July 26th. At this meeting several eminent physicians of Germany were present, Virchow being the presiding officer.

In view of the symptomatology of cholera, the investigations of the commission were especially directed to the alimentary canal. Many varieties of bacteria were here found, but a particular bacterium was observed which was distinguished from the others by its form and its situation. It was apparently rod-like, and, therefore, was considered to be a bacillus. A distinctive feature was a curve, which led to the comparison to a comma, and hence the name "comma bacillus," by which it is now commonly designated. From the corkscrew shape which some specimens presented, however, it is doubted by Koch whether the organism really belongs among the bacilli. Taking into account other circumstances in connection with the shape, he is disposed to regard it as a spirillum. This micro-organism was observed in more or less abundance, among other bacteria, in the contents of the intestine, and also within the tubular glands, between the epithelium and the basement membrane of the intestinal walls, and in a still deeper situation. The investigations in relation to this so-called comma bacillus, pursued in Egypt, in Calcutta, and in Toulon,

resulted in the conclusion that it is the essential cause of cholera.

That the comma bacillus is a veritable organism is not doubted. It may be cultivated in various culture media—namely, meat infusion, milk, gelatin, blood serum, and on the potato. It grows and multiplies in these culture media with great rapidity, at a temperature of from 60° to 107° F., and dies after a brief stationary period.

On what grounds do Koch and his associates base the conclusion that this bacterium has an essential causative relation to cholera?

1. That the organism is present in all well-marked cases of cholera. Koch failed to find it in no instance, the number of cases examined being one hundred.

Somewhat opposed to these observations by Koch are those by a commission composed of MM. Straus, Roux, Nocard, and Thuillier, who studied the disease in Egypt in August, 1883, by direction of the French Government. This commission found in twenty-four autopsies a micro-organism which was probably the bacillus described by Koch in the same situations within the small intestine. In all except three of these twenty-four cases this micro-organism was more or less abundant, the number exceeding that of any of the other varieties of bacteria. In three cases, however, only a very few were found, notwithstanding, as is stated in the report of the commission, diligent search was made for them. From the small number of these micro-organisms in these few cases, the members of this commission conclude that, quoting the language of the report, they "do not feel authorized to attribute a specific action to the microbe which they found in greater abundance in the majority of cases." It would certainly not be fair to attribute the fact of only a few bacilli having been found in these three cases to want of skill or to some defect in the materials or the methods of the microscopical examinations, although, naturally, a suspicion of this kind arises. Moreover, the report states that the commission were not acquainted with the *technique* followed by Koch. The discrepancy between the results of the examinations by the French commission and of those by Koch renders important further investigations by different competent and trustworthy microscopical observers.*

2. That the organism is not present in the healthy body nor in cases of diseases other than cholera. In a considerable number of cases of different diseases the results of examinations by Koch were negative as regards the presence of this parasite in either the intestine or its contents. It has been stated that a parasitic organism identical with the comma bacillus has been found by MM. Straus and Roux, and by others, in cases of other affections than cholera. I am not aware that in any instance as yet the presence of this parasite has been demonstrated by the culture-test except in cases of cholera. Obviously this test is essential in order to remove all doubt as to the accuracy of microscopical observations. Of course, further investigations in regard to the second ground on which is based the evidence of the parasitic doctrine of cholera are desirable, if

* For the report of the French commission, *vide* "Archives de physiologie normale et pathologique," Paris, 15 Mai, 1884.

not indispensable, before the doctrine can be considered to be positively established.

Within a few days, and after the greater part of this paper was written, a communication has appeared in the London "Lancet" (September 20th), by Surgeon-Major Timothy Richards Lewis, M. B., Assistant Professor of Pathology in the Army Medical School (Netley), in which it is stated that "comma-like bacilli, identical in size, form, and in their reaction with aniline dyes, with those found in choleraic dejecta, are ordinarily present in the mouths of perfectly healthy persons." The communication contains a comparison as regards the measurements of the cholera bacilli with those obtained from the secretions in the mouth in six specimens of each. It does not, however, appear that the culture-test of the faecal bacilli has been resorted to. If the statement by Lewis is correct, it can not fail to be speedily verified; and, if not correct, it will be disproved by other microscopical observers. Of course, if it is demonstrated that the bacilli of cholera are present in the mouths of healthy persons, although their presence in the intestinal canal may be characteristic of cholera, they are not the causative agents of this disease, but the disease simply furnishes an appropriate soil for their habitat. The intestinal mucous membrane in this disease is only a culture medium.

Should it be established that the comma bacillus is invariably present in cases of epidemic cholera, and that this parasite is never present except when this disease exists, it is logically certain that there is an essential pathological connection between this parasite and the disease. It does not, however, follow that the parasite is the cause of the disease. The grounds on which a pathological connection is certain are consistent with an opposite causative relation—that is to say, the disease may furnish local conditions essential to the growth and multiplication of the parasite, which, in this point of view, is secondary, and an effect, instead of being the cause of the disease.

A crucial experiment for determining a causative connection of the parasite with the disease is inoculation. If, as in the case of the *Bacillus tuberculosis*, the parasite of cholera, after a series of cultivations, is capable of producing the disease by inoculation, the proof of its being the essential cause is absolute. Koch reports failure in his efforts to obtain this proof. Different animals were inoculated repeatedly, but with negative results as regards the production of a disease having the characteristics of epidemic cholera. Similar efforts were made by the members of the French commission with the same negative result.

Continued experimental observations may lead to success in the transmission of the disease to animals. In the same number of the London "Lancet" (September 20) which contains the statement that the comma bacilli may be found in the secretions from the mouth in healthy persons, it is announced that two Swiss physicians, Rietsch and Nicati, who have been engaged in laboratory investigations of cholera in Marseilles, under instructions from the French Government, have succeeded in producing the disease in guinea-pigs by injecting the choleraic dejections into the duodenum. Of course if the success claimed by these ob-

servers is confirmed, it is proof demonstrative that the disease may be communicated, and it will then only remain to be demonstrated that the bacillus is a contagium vivum, by finding that inoculation therewith, after everything extraneous has been eliminated by cultivation, suffices to produce the disease.*

It is, however, to be considered that failure to obtain proof by the latter crucial experimental test by no means disproves the parasitic doctrine of cholera. All animals are not susceptible to the morbid action of micro-organisms which are known to be the causative agents of specific diseases in man. This is true of the *Bacillus tuberculosis*. Experiments have as yet failed to produce in animals typhoid fever by inoculation with the micrococcus which it seems quite certain is the causative agent in the production of that disease. The same is true of the bacillus of leprosy. On the other hand, certain infectious diseases which affect lower animals seem not to be communicable to man—e. g., Rinderpest and the pleuro-pneumonia of cattle. Quoting the language of Koch, "parasites have their special hosts; many kinds of animals have each its own tape-worm which can not develop in any other animal."

In the absence of the demonstration by inoculation of the parasitic doctrine of cholera, what ascertained facts go to sustain this doctrine?

A fact which speaks strongly in support of the doctrine has been already stated—to wit, that, reasoning by analogy, all infectious diseases may be logically considered as parasitic. Accepting the truth of this statement, the question is, whether the specific cause of cholera is the comma bacillus, or some other micro-organism not yet discovered. Now, as between the comma bacillus and other intestinal bacteria, with our present knowledge, the pathogenic claims of the former seem to be paramount.

Not accepting opposing statements, the correctness of which remains to be verified or disproved, and assuming the comma bacillus to be found exclusively within the alimentary canal, and only in cases of cholera, the pathological connection of the parasite with certain well-marked lesions of the mucous membrane of the small intestine is to be considered. These lesions are either due to the presence of the parasite, or they furnish a peculiar soil for its cultivation, in the latter point of view the parasite being a product of the lesions. Now, epidemic cholera, in all parts of the globe except India, is an exotic disease and of rare occurrence. In view of these facts, is it not vastly more improbable that the lesions precede the presence of the parasite than that the parasite exists prior to, and is the essential cause of, the lesions?

Koch's observations show that the comma bacillus grows and multiplies outside of the body, under favorable conditions of moisture and temperature, with very great rapidity, and that after two or three days the generations die out.

* In a more recent communication (quoted, from the "Deutsche medicinische Wochenschrift" for September 25th, in the Philadelphia "Medical News" for October 18th), Dr. Rietsch and Dr. Nicati profess to have produced cholera by the introduction of a pure culture of the bacilli into the duodenum of the dog after ligation of the ductus choledochus.

These observations are in harmony with those made in cases of cholera, and with the clinical history of the disease. Cholera is a disease remarkable on account of the brief duration of its career. The duration of the disease is not longer than that of the successive generations of the comma bacillus when cultivated outside of the body. The symptoms and pathological conditions occurring in cases of cholera after what is commonly known as the stage of reaction has taken place are, in reality, sequels of the disease. Now, the comma bacilli are found in the intestinal canal and in the dejections, in more or less abundance, early in the course of the disease. They are less abundant as the disease approaches the end of its career, and they disappear when the career of the disease is ended. These facts speak strongly for the parasitic doctrine.

It would go very far toward establishing the parasitic doctrine were it to be shown that the parasite had been introduced into the body prior to the development of cholera. Could this fact be established in a considerable number of instances, the proof of the doctrine would approximate to that afforded by inoculation. Some striking facts observed in India bearing on this point have been noted by Koch. It seems that in certain parts of India the water used in bathing, washing, cooking, and drinking is contained in tanks which are liable to become polluted by human excrement as well as by various kinds of filth. The occurrence of localized epidemics of cholera in the vicinity of these tanks had been a matter of frequent observation. Such a localized epidemic occurred during Koch's visit in India. About one hundred persons living in huts situated in the vicinity of a tank had been attacked with cholera. Examinations of the water in this tank showed the presence of the comma bacilli. The disappearance of these from the tank was coincident with the ending of the cholera epidemic. Examinations of water in other tanks were negative as regards the presence of these bacilli. That the water in the tanks gave rise to cholera had been previously the opinion of medical practitioners in India, and it had been observed that the substitution of pure water in certain situations had led to the disappearance of the disease.

In the endeavor to form a correct judgment concerning the merits of the parasitic doctrine of cholera, evidence should, of course, be weighed impartially, avoiding, if possible, any undue bias from preconceptions or first impressions. To accept a doctrine prematurely because it is new and attractive would be not less illogical than an irrational skepticism. A proper sentiment of conservatism should lead us not to commit our minds unreservedly until sufficient data have accumulated to serve as a solid basis for a judicial decision. That this decision will be in favor of the doctrine I believe to be probable. I may add that, in expressing this belief, I am not under the necessity of doing any violence to views heretofore expressed. I will venture to quote from the fifth edition of my work on the "Principles and Practice of Medicine," published in 1880, as follows: "If the germ-theory be adopted as affording the most rational explanation of the causation of other infectious diseases, this disease (cholera) certainly comes within the range of its application. Adopting this theory, the disease requires

for its production a specific germ or organism. Adopting the theory of indirect communicability, as just stated, germs are contained in choleraic excreta, but they require development under favorable conditions without the body in order to acquire infective power. . . . When the cholera-germ has undergone the requisite development, it may be transported in the atmosphere or carried from place to place attached to clothing, merchandise, etc. It is also intelligible that undeveloped germs may in like manner be transported, and find, in situations more or less distant from the places in which they are produced, the conditions favorable for their development."

It is not to be denied that there are difficulties in the way of reconciling the parasitic doctrine, as developed by Koch, with certain facts relating to clinical experience. The greatest of these difficulties relates to the diffusion and transportation of the contagium vivum. Assuming that the parasite is received into the body exclusively with the ingesta, it is difficult to explain the occurrence, not infrequently, of cases simultaneously, or in rapid succession, in different situations, more or less widely separated from each other, early after the occurrence of an epidemic invasion. It is difficult to reconcile the immunity from the disease of a very large proportion of those who are brought into long and close contact with cases of cholera, and the development of the disease, in a large proportion of cases, when there are no apparent means by which the parasite could be conveyed. These are difficulties somewhat analogous to those in the way of reconciling with clinical experience the communicability of tuberculous disease. Argumentatively, they are to be met, in either instance, by the question, Is the parasitic doctrine true or not? In other words, Is this doctrine substantiated by incontrovertible facts? If the answer be in the affirmative, difficulties, however great, in the way of reconciling the doctrine with clinical experience do not disprove the doctrine; they simply show that further knowledge is to be acquired before the reconciliation can be made evident. If the doctrine is true, the apparent discrepancy between it and clinical experience is to be laid to the account of our limited knowledge, and should not lead us to distrust the doctrine. To remove any discrepancy should be the object of continued investigations.

Assuming the truth of the parasitic doctrine, what is its bearing on the treatment and on the prevention of epidemic cholera? This question is of pressing practical importance at this time, when an invasion by this disease at any moment may be looked for.

The destruction of the parasite within the intestinal canal by any of the parasitocides which are found to destroy it outside of the body appears impracticable. It seems that the anti-parasitic agents with which we are acquainted, introduced into the intestinal canal sufficiently to prove toxic to the parasite, must prove toxic to the patient. Here, however, is a field for investigation by no means as yet fully explored, and it is possible that an agent may be found capable of destroying the parasite without risk to the patient.

The parasitic doctrine does not, of course, invalidate what clinical experience has taught respecting the treatment of cholera. And clinical experience has taught that there

is no disease with greater certainty controlled at the outset than this. The controlling remedy, *par excellence*, is opium. Let opium, conjoined with rest of the body and of the digestive organs, be judiciously employed before the characteristic choleraic dejections occur, and the further development of the disease is prevented with almost absolute certainty. Let this treatment be promptly resorted to as soon as choleraic dejections have taken place, and, in a large proportion of cases, the disease is arrested. I make these assertions, not alone on the testimony of others, but on a pretty large experience in epidemics which have already occurred in this country.

What is the *modus operandi* of opium in this disease? Does it act by producing a narcotic effect on the parasite? Does it lead to the destruction of the parasite by an effect upon either the secretion or the absorption of bile, preventing thereby alkalinity of the intestinal contents, which alkalinity, according to Koch's observations, is essential for the life of the bacillus? Is its efficacy due to its effect upon the peristaltic movements of the intestine? I am not prepared to answer, and it would be useless to discuss these and other questions which might be raised. We have here an instance, which is not rare, of an important therapeutical truth, based on clinical experience, which we can not satisfactorily explain, but the claims of which, as regards medical practice, are not any the less imperative because, in the present state of our knowledge, it is inexplicable.

The bearing of the parasitic doctrine on the prevention of cholera has more apparent importance than the bearing on the treatment.

In the first place, it is probable that the recognition of the bacillus in the dejections will enable us to determine positively the nature of the disease in cases which precede its epidemic prevalence. As is well known, prior to and during the diffusion of the disease, with its well-marked characteristics, cases of apparently simple diarrhoea are common. There is reason to believe that the parasite is the morbid agent in these cases. Observations with reference to this point are desirable. Assuming that cases of so-called cholera have the same ætiology as cases of true cholera, the occurrence of the former will seem to explain, in a measure, the diffusion of the disease. As foci for the production of the contagium, they may be not less instrumental in the diffusion of the disease than cases of fully developed cholera. It follows that measures for the destruction of the parasite after it leaves the body are not less important for the prevention of the disease in all cases of cholera than in cases of cholera. This view of the prophylaxis is not altogether new; but its importance will be enhanced by the discovery that in cholera, as in cholera, the dejections contain the parasite. Moreover, the presence of the parasite both in cholera and in cholera will settle definitively the question, heretofore much discussed, as to the pathological identity of the two affections.

As to the preventive measures to be employed, if the parasitic doctrine is true, the direction which these should have is sufficiently clear. Complete destruction of the parasite directly it leaves the body is the object to be effected. If this object is thoroughly effected, every case of cholera

is rendered sterile as an agent in the propagation of the disease. Koch's observations have shown that the comma bacillus is destroyed by desiccation, and that it is rendered torpid, but not destroyed, by cold. After a few hours, if moistened cloths containing the parasite are allowed to dry, they become innocuous as fomites. This is an important and suggestive fact. But the process of drying, even when expedited as much as possible, involves some loss of time. If articles soiled by dejections are not immediately burned, they should, without a moment's delay, be subjected to an efficient disinfectant. It suffices, as regards quarantine regulations, that clothing or merchandise from places in which the disease prevails be either disinfected or detained long enough to avoid all danger from the importation of the parasite.

The local conditions under which the parasite thrives outside of the body have as yet been insufficiently studied by means of microscopical observations. Observations, however, have shown that filth of all kinds promotes the diffusion of the disease.

There is another field for study concerning which accurate information is wanting—to wit, the conditions within the body which favor the colonization, growth, and multiplication of the parasite. Koch failed to find the parasite in the stomach except in a very few instances, and in these it was supposed that the contents of the intestine had regurgitated. He infers, therefore, that the acidity of the gastric fluids is fatal to the parasite, and that it passes into the intestine with safety only when the stomach is in an abnormal condition. Clinical experience, however, hardly sustains the conclusion that disorder of the stomach precedes the advent of cholera. In many, if not most, instances persons are attacked by the disease when in apparently perfect health. That a peculiar susceptibility or a predisposition is an important, if not an essential, factor in the ætiology of the disease, is not improbable, but our present ignorance of the conditions constituting this susceptibility or predisposition is as complete as in regard to tuberculosis, and also other infectious diseases.

In connection with these remarks on the prevention of cholera, I desire to call attention to the history of the disease in this city in 1866 and 1867. In these years were exemplified the measures by which an epidemic of cholera may be "stamped out." The stamping out in this city was by measures which are in accordance with the parasitic doctrine of the disease, and affords strong, if not conclusive, proof of the truth of this doctrine.

In anticipation of the prevalence of cholera in 1866, the Metropolitan Board of Health, which had been recently organized, adopted a system of prompt and thorough disinfection whenever and wherever cases of the disease might occur. Sanitary inspectors were appointed, some of whom were constantly on duty at the central office of the Board of Health, prepared to visit at once cases reported as cases of cholera and to decide upon the diagnosis. A disinfecting corps was organized, consisting of soldiers who had been in the recent civil war. They were under the charge of one who had served as an officer in the war. Wagons loaded with disinfecting material were in readiness, together with

horses in harness, at a moment's notice. The system was analogous to that of the Fire Department. The object was to disinfect the houses and the surroundings wherever a case of cholera occurred, precisely as it is an object of the Fire Department to extinguish a conflagration as expeditiously as possible. All the arrangements were under the supervision and direction of the sanitary superintendent, the late lamented Edward B. Dalton, an officer of rare executive ability. What was the result of these measures to prevent the diffusion of cholera? Cases of the disease occurred, during the summer and autumn of 1866, in 362 houses more or less widely separated from each other. In no instance did the disease extend proximately beyond the house in which a case or cases occurred.

In 1867 twenty-seven deaths from cholera occurred in the city of New York, five cases occurred in the city of Brooklyn, and eighteen at the military post in the harbor of New York. The measures for stamping out the disease were those employed in 1866, and the disease did not prevail as an epidemic. For further details in reference to the history of the disease in this city and neighborhood in 1866 and 1867, I refer to the reports of the sanitary superintendent and of the statistical secretary (the late Elisha Harris), which are contained in the volumes published by the Metropolitan Board of Health for those two years.

My belief is that never before nor since, in any other part of this or in any other country, have measures for the prevention of epidemic cholera been devised so scientifically, so thoroughly carried out, nor so successful in the results as those employed by the New York Metropolitan Board of Health in 1866 and 1867. The facts pertaining to the history of cholera in this city during these two years, as I have said elsewhere, are of momentous importance. They should be cited throughout the world as evidence that cholera is a disease which may be stamped out by efficient sanitary measures efficiently employed. It is my belief that in Marseilles, Toulon, and Naples—which have been lately scourged by this disease—the progress of the epidemic could have been arrested by the measures which were demonstrated to be effectual in this city in 1866 and 1867, and that thousands of lives might have been thereby saved. I believe firmly that, should the disease be again introduced into this country, to decide whether or not it shall prevail as an epidemic lies within the power of preventive medicine.

In conclusion, let me say a few words in reference to the study, not alone of cholera, but of other infectious diseases. We are entering upon a revolutionary period in the progress of medicine. Hereafter this present period will be cited as the commencement of an important era in medical history. The progressive advancement of our knowledge of the causes of the infectious diseases will revolutionize not only aetiology and pathology, but therapeutics. A new impulse and direction will be given to experimental researches and to clinical observations as regards the treatment of these diseases. Now, shall the medical profession of our country actively participate in the study of micro-organisms and their pathological relations, or, on the other hand, be content to await passively developments by the labors of active workers in other countries? A large field

is open to those who desire to engage in this study. At the present time, in addition to phthisis and epidemic cholera, typhoid fever, malarial fever, and pneumonic fever are special subjects for investigation. Other infectious diseases—the eruptive fevers, typhus fever, yellow fever, cerebro-spinal fever, dysentery, influenza—remain to be studied. Our country offers ample opportunities for the study of these diseases with a view to discover and investigate the parasitic organisms which—as there is reason to believe—are essential factors in their causation. Is there lack of ability on this side of the Atlantic to prosecute this study? If not, what is lacking? The answer is, self-reliance and energy; self-reliance leading American pathologists to become not merely followers, but competitors, in this field of study, and energy sufficient to overcome obstacles. It must be granted that in this country in the way of original investigations there are difficulties which do not exist to the same extent in other countries. Our Governments offer neither encouragement, nor rewards, nor adequate facilities for the development of knowledge in a field of study which, more than any other, is intimately connected with life and health. Incitements must be derived from the attractiveness of the study, from a desire to acquire and promote useful knowledge, together with a laudable ambition for professional distinction. Private beneficence must take the place of governmental aid. The recent munificent gift by Andrew Carnegie, for a building to be devoted to physiological and pathological laboratories, is an example which, it is to be hoped, will be followed by others who, like him, desire to contribute to the progress of science and the welfare of humanity.* With sufficient self-reliance and energy, together with the co-operation of our philanthropic fellow-citizens, this city of New York may be made celebrated as a place of resort for instruction as regards the methods and the results of pathological study, and also for having originated some of the discoveries which are to affect incalculably the science and the practice of medicine.

THE THERAPEUTICAL EFFECTS OF THE INTERNAL ADMINISTRATION OF HOT WATER IN THE TREATMENT OF NERVOUS DISEASES.

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(Concluded from page 427.)

THE EFFECTS OF THE TREATMENT.

1. On drinking a goblet of hot water for the first time, a sense of warmth within the stomach will be produced, unaccompanied with nausea. This is not the case with warm water, since emesis often follows its introduction into the

* Since this paper was in type, it has been announced that Mr. William H. Vanderbilt has given to the New York College of Physicians and Surgeons half a million of dollars. Great as will be the immediate beneficial results of this magnificent gift, we may hope for still greater benefit from it as tending to give to private beneficence a direction toward the promotion of medical knowledge and medical education.

stomach. Hot water increases downward peristalsis; warm water reverses peristalsis and induces vomiting. Eructations of gas from the stomach commonly occur within a few minutes after the first dose of hot water. This effect may persist for some weeks. Excessive eructation indicates that fermentation of food occurs after eating, from defective alimentation.

2. The *skin* soon shows the effect of the heat. A gentle glow with a tendency to perspiration is developed rapidly. This is diffused over the entire body. Coldness of the extremities is often very much benefited, and in a short time, by this treatment. The circulation of the body appears to become more uniform. It is rational to suppose that the viscera are often thus relieved of engorgement, and aided in the performance of their proper functions. Perspiration so induced is unquestionably associated with an increased supply of blood to the skin, since it is accompanied with a sensation of increased warmth.

3. The *kidneys* exhibit marked effects of this treatment early. Almost immediately, the quantity of urine is increased. It is usually improved also in its proportion of solid ingredients, provided the organs are inclined to be sluggish. If, on the other hand, diabetic symptoms exist, the specific gravity is frequently modified and the quantity reduced. One patient, who was lately placed under my care with marked saccharine diabetes and symptoms of cerebral hyperæmia of a severe type, has been perfectly cured by hot water, restricted diet, and simple tonics. He had previously tried all the known remedies (and a diabetic diet as well) for years without benefit. I was called in consultation about a year ago in a similar case, and the patient recovered under this treatment. He had symptoms of an alarming character and had previously found no relief. Both of these cases were, in my opinion, of neurotic origin. The head symptoms, which were very marked in both, disappeared under the same treatment, although the actual cauterly had been tried thoroughly and had failed to arrest them.

4. The *accessory organs of digestion* (the liver and pancreas) seem to be stimulated by the internal use of hot water. Gradually, under its continued use, the bowels move regularly and the feces eventually become soft and yellow in color.* Flatulence and constipation are enumerated as things of the past. I have known hæmorrhoids of long standing to disappear under this treatment. Chronic diarrhoea was thus arrested by me in one instance. It was apparently due to extreme nervous debility.

5. The *nervous system* seems to be profoundly impressed by a prolonged use of this agent. Especially is this the case among that class of patients who suffer from the effects of hyperæmia and anæmia of the brain and of the spinal cord and spinal nerves. Perhaps there are no greater sufferers than are found among this class. I have at present under my care a lady who, for twenty years, has been confined almost constantly to her house from neuralgic attacks which have withstood all medicinal agents. Under the use of hot water and the meat diet (she is somewhat fleshy),

the symptoms have shown a marvelous improvement within one month. Her paroxysms are already very much diminished in their severity, and are comparatively infrequent. I hope to see them disappear entirely.

I have at present under my charge several patients suffering from locomotor ataxia. I am treating them by the internal administration of hot water, in conjunction with the actual cauterly, nitrate of silver, and the iodide of potash. Sufficient time has not yet elapsed, since the hot water was prescribed, to state positively that permanent benefit has been derived from it, but I am convinced that very marked improvement has followed its use in two cases. It is my intention to published subsequently the records of all of these experiments. Thus far the efforts of neurologists to arrest progressive sclerosis of the posterior columns of the spinal cord have been unsatisfactory, and the question of a direct dependence of this condition upon a syphilitic taint must probably (to my mind) be decided in the negative.* Pathological research to date has not aided us in determining its ætiology; hence its treatment, as yet, is purely empirical, and experimentation regarding its cure is particularly to be desired. I can only say in this connection that one patient, whom I have at present under observation, came to me unable to walk, save by the aid of two canes and a body servant. Already one cane and the servant have been dispensed with, and the patient suffers less than he did from anæsthesia of the limbs and lightning pains. Another, who had diplopia, and marked incoordination of movement, is no longer troubled with imperfect vision and walks with more confidence. I am aware that similar results have been recorded without recourse to the hot-water treatment, but in these cases it seems to have been a marked factor in the amelioration of the symptoms. If it could be proved that this agent exerts a remedial influence upon gray degeneration of the spinal cord, what a boon would be conferred upon thousands who are now suffering without much hope of cure.

The paucity of literature upon this therapeutical agent renders statistics collected from the experience of others impossible.

This paper is necessarily but a record of my own experience. I may be pardoned for apparent egotism, therefore, if I refer here only to cases which have been intrusted to my care.

Within the past five years I have succeeded in curing three cases of gastralgia, where the paroxysms have been frequent and terribly severe for a long time. In one of these (that of a gentleman of great will and courage) the severity of the pain would frequently cause fainting. In another (that of a lady of forty-five years of age) the gastric pain had been constant for years, and gastric cancer had been suspected to exist.

Patients with neurasthenia are almost invariably benefited by the hot-water treatment. In many instances I have

* The statistics upon which syphilis has been classed among the ætiological factors of ataxia are open to severe criticism. Our present knowledge of the morbid changes produced by syphilis upon the cerebro-spinal axis does not appear to sustain the view that systematic lesions of the cord are ever directly produced by it.

* At first the feces are made very black by the washing down of the bile.

witnessed a rapid disappearance of all the abnormal nervous phenomena. Two cases of local anæmia of the brain, with transient aphasia, have been lately observed by me. Both patients recovered under the hot-water treatment and tonics. The latter had been tried alone in one of them, for some premonitory symptoms, without marked benefit.

To cite all of the cases in which I have employed this agent, either alone or in combination with other methods of treatment, would exceed the limits of this article. I believe, however, from my observations to date, that the use of hot water will prove of great value in neurasthenia and some of the functional nervous derangements.

My observations of its effects upon epilepsy and chorea are as yet imperfect, and therefore lead me to no positive conclusions.

I think it not impossible, moreover, that the continued use of this therapeutical adjunct may tend to modify, if not arrest, some of the progressive degenerations of the cord. I am not prepared to make any assertion to that effect, however, although I am testing it in some aggravated cases, in connection with the use of the cautery and medicinal agents. This field has been previously referred to.

THEORY OF ITS ACTION.

It is a temptation to speculate in regard to the probable channels through which the effects of hot water upon the system are exerted. To my mind, the neurotic theory is the most plausible. I believe that the nerves of the stomach, and possibly the solar plexus (the ramifications and connections of which with the central nerve-centers are not fully determined), are directly influenced by the heat introduced into the empty organ.

Mayer and Pribam have already shown that electrical and mechanical irritation of the walls of the stomach can produce a reflex contraction of the cerebral vessels. Kussmaul has demonstrated that similar effects may follow faradization of the cervical sympathetic. Nothnagel and Loven have proved that irritation of peripheral nerves exerts a marked effect upon the arteries.

The solar plexus lies immediately behind the stomach, and is connected with all of the abdominal viscera. The splanchnic nerves of either side, and probably the terminal filaments of the right pneumogastric nerve, enter into its formation. It is therefore connected directly with the brain and the main sympathetic cords, and indirectly with all of the organs of the body. It is the most important of all the sympathetic plexuses, as well as the largest. Why are we not justified in believing that the effect of stimulation of this plexus, by heat through the stomach, will accomplish that which electrical stimulation of the stomach itself has been proved to attain? Are we not warranted in attributing the warmth of the skin, the perspiration, the increased activity of the kidney, the stimulation of downward peristalsis, and the other effects of this agent, to a remote influence upon the vaso-motor nerves or their centers? If so, why is the view irrational that cerebral and spinal hyperæmia and anæmia may be controlled and brought to the normal standard by the same means?

POINTS IN ITS FAVOR.

This method of treatment has certainly one thing in its favor that few possess—viz., it is harmless. Because its remedial effects are slow in some cases, it is no proof that they are not doubly permanent. Are we not convinced daily that many of the more common nervous diseases are obscure in their origin, and that the removal of the cause might hasten recovery, if we could only detect it?

Most of our nationality chill their stomachs with ice-water between meals and during the act of eating. Who would think of feeding a horse, and placing a bucket of ice-water by his side? The question may well be raised if this one habit alone has not done more harm to the nervous systems of men than tobacco or alcohol, the use of which is mentioned in all text-books as an ætiological factor in nervous diseases.

I believe that the success of the hot mineral waters, as consumed at the famous springs of this country and Europe, for chronic diseases, depends more upon the employment of internal heat as a therapeutical agent than upon the mineral ingredients of the waters themselves. I do not advance this view to disparage the medicinal qualities of these waters, but to bring into prominence the view that heat, restricted diet, and enforced mental and physical rest, are probable factors in the remarkable cures that are brought about by their use.

In anticipation of argument, I might say that I am well aware that this agent is not a new one, and that it is not always followed by the effects enumerated. Who of us, however, has not met, in professional experience, cases where opium has failed to produce sleep? Yet who doubts that it is one of our chief hypnotics? I lately encountered a case where sixty grains of morphine were consumed daily, by the mouth, and constipation had never existed. Yet who would dispute the statement that this drug tends, as a rule, to restrain the free action of the bowel, even in small doses? Because the public are to-day crazed over hot-water drinking, and are asserting for it medicinal virtues to which it has no title, are we justified in denying for it a fair trial in those diseased conditions that withstand the routine medicinal treatment recommended by text-books? We have undoubtedly yet to learn exactly to what extent it exerts a remedial influence upon the kidneys, digestive organs, vascular apparatus, skin, and the principal nerve-centers, but that it is potent in some cases can not be disputed. *No pretension is made for it here as a panacea.*

Again, it may be argued that, in some of the cases to which I refer, this agent has been employed in conjunction with restricted diet, the actual cautery, the internal administration of tonics, etc.; and that some of the benefits may justly be attributed to these factors in the treatment. To this criticism I would reply that, in some of these cases, the hot water has not been used until the other agents spoken of had been thoroughly tried, and that improvement has been markedly hastened by adding it to the previous treatment. In one diabetic case reported, the symptoms were not controlled by drugs or restricted diet; but the excretion of sugar ceased in a few weeks, when hot water was ordered as an adjunct to a diet from which all starchy and saccharine foods were expunged.

A third class of critics, whom I as well as most of those present have often encountered in argument, are those who expect immediate results, and who throw every agent overboard in case they fail to get results as promptly as they had expected. They argue that patients will not take any form of treatment with regularity which does not show rapid results. Admitting for the sake of argument (and on no other ground) that there may be a shadow of truth in this statement, I would reply that (provided the patient is prepared at the first visit for slow results, and informed in respect to its action) this objection can be overcome. I would suggest, furthermore, that the use of hot water does not preclude the employment of opiates and other drugs, when the exigencies of the case seem to demand them. One reason why this agent may not be productive of good results, even in favorable cases, is that it is not given systematically and in accordance with the rules previously suggested. Hot water is unquestionably not conducive to health, if poured into the stomach without restrictions as to quantity and the proper time for its administration.

CONCLUSIONS.

In summary, I would urge a thorough trial of this therapeutic agent by the profession on the following grounds:

1. It is harmless, if properly administered. A degree of temperature that can be endured by the mouth will not impair the integrity of the stomach. Absurd as it may seem, I have heard this argument used by men of intelligence with every appearance of sincerity. Many of us drink coffee and tea at an equally high temperature, and in as large quantities, as are compatible with the hot-water treatment.

2. Its effects are comparatively uniform, provided it be given for a sufficient period. Exceptions prove a rule. Isolated cases may be occasionally encountered where the results as stated do not occur.

3. It seems to exert a curative influence upon many of the chronic diseases that influence and disturb the proper assimilation of food. Some of these are important factors in the development of nervous derangements. I restrict my statements for hot water as yet chiefly to the cure of these diseases, because I have not scientific data upon which to base a broader statement. Subsequent investigation can alone decide to what limits the remedial use of this agent should be restricted.

4. It appears that the curative influence of hot water is not usually transient. In many of my cases the symptoms have shown no tendency to return when once checked by its use, provided that the patient's indiscretions do not lead to a relapse.

5. It may be employed as an adjunct to all recognized methods of treatment, without detriment to the patient.

6. It exerts a marked influence upon vascular disturbances of the nerve-centers. Especially is this the case, in my experience, with those subjects that suffer from cerebral hyperæmia and anemia. I have seen some remarkable results follow the protracted use of the hot-water treatment in headache, vertigo, neuralgia, insomnia, and other conditions produced by vascular disturbances.

7. In diabetes, and in some kidney derangements, I have seen the most happy effects follow the internal administration of hot water. Its action as a diuretic is quite remarkable in some cases. It seems also to influence the secretion of urinary salts, since the specific gravity is modified often to a marked degree. The specific gravity of the urine is my guide in regulating the quantity of hot water for daily consumption.

8. As a laxative, hot water has a slow but decided action. The feces are at first rendered black, from an excess of bile, but they gradually change to a yellow color, and become more like that of the infant. It seems to be a justifiable deduction, therefore, that the functions of the accessory organs of digestion are made active by its use, and brought to the standard of health.

9. The skin is stimulated by the use of this agent, and the cutaneous circulation is apparently rendered more uniform. I have seen the hue of the skin in disease altered by it, and eruptions of a chronic character markedly benefited.

10. From a few experiments which I have made with reference to the effect of this agent as a preventive of seasickness, I am led to believe that it should be employed for from four to six weeks preceding an ocean voyage, in accordance with the rules given earlier in the evening.

In conclusion, I would state that, if I have been led to express views that may appear extreme to many, it is because my convictions are based upon clinical observations of no inconsiderable magnitude. I have seen my previous failures in treatment turned by this agent into brilliant successes in some instances. In others, symptoms have been ameliorated by the use of hot water more rapidly than by methods of treatment universally recommended by text-books. To what limits the value of this agent will be restricted, as a therapeutical adjunct, the results of collected observation and experience to date can not fully determine. I shall await with interest the published results of the experience of others, who have doubtless employed this agent in various forms of chronic diseases, and especially those bearing upon the department of neurological medicine.

156 MADISON AVENUE.

A FEW CLINICAL FACTS REGARDING COCAINE HYDROCHLORATE, THE NEW ANÆSTHETIC.

By LE ROY POPE WALKER, M. D.,
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THE following cases are a few, selected from a large number, that have come under my observation during the past week:

CASE I (Service of Dr. W. F. Mittendorf).—M. T., female, aged twenty-one, highly nervous. Had a tenotomy of left internal rectus done two years ago for convergent squint. She has heart trouble. The operation was performed without ether, and she states that the pain was so great that "a dozen young doctors," who were present at the operation, could scarcely hold her. The result of this tenotomy was very unsatisfactory. She came "prepared to take ether, even at the risk of her life,"

as she said. Cocaine (two per cent.) was instilled, about twelve drops. After an interval of about five minutes (was not timed) a very thorough tenotomy was made, taking little more than one minute. The patient did not resist, and experienced no pain, "only a little pressure" (from speculum).

CASE II (Service of Dr. Mittendorf).—J. R., male, aged eight. Had a double tenotomy done six days ago, the sutures remaining. Not wishing to give ether or chloroform, a few drops of cocaine (8-10) were instilled. After five minutes, speculum introduced without resistance and sutures removed. Complained of no pain.

CASE III (Service of Dr. Mittendorf).—M. R., male, aged thirty-nine, received a contusion of cornea, which resulted in a large superficial and painful ulcer. Atropine and warm compresses failed to give relief, and use of cocaine was resorted to; one drop every half hour. The relief was perfect but temporary, and the cocaine had to be used for thirty-six hours until relief was obtained. Ulcer healed in this time.

CASE IV (Service of Dr. M.).—J. P., male, aged fifteen, traumatic cataract. Had been needed before without ether and resisted very much. Ten drops of cocaine instilled, and, after interval of eight minutes, permitted insertion of speculum and attachment of forceps to conjunctiva, without a symptom of discomfort. Needling completed without pain or inconvenience.

CASE V (Service of Dr. M.).—Female, aged eight, congenital cataract; highly nervous, and much frightened. After two instillations of cocaine, speculum introduced with a little resistance (fright), and permitted needling to be finished, in very good order. Said afterward that it caused no pain.

CASE VI (same service).—P. F., male, aged fifty-seven, secondary cataract. After one instillation (cocaine) cornea and conjunctiva anæsthetic. Dissection of capsule completed without pain.

CASE VII (same service).—J. W., male, aged five, convergent squint, very nervous. After two instillations, interval three minutes, permitted introduction of speculum, and completion of other steps of operation (tenotomy) with a little resistance, but it was due more to fright than to pain. Said afterward that he had not been hurt.

CASE VIII (same service).—M. McD., female, aged eleven, iris caught in old cicatrix. After two instillations, operation for iridectomy completed very quietly, and without resistance. Experienced no pain.

CASE IX (same service).—W. W., male, aged thirty-one, had a small piece of emery in cornea. Eye very much irritated by former attempts of fellow-workmen to remove it. After using eight to ten drops of cocaine, cornea was so anæsthetic that he did not feel scraping of the needle used to remove it.

CASE X (out-door service).—A. F., male, aged thirty-five; foreign body imbedded in cornea. Eye very sensitive. Patient resisting greatly any attempt to open lids. Two instillations of cocaine, interval two minutes (timed). Seven minutes after first instillation, cornea perfectly anæsthetic, as also conjunctiva. Permitted foreign substance to be removed, and conjunctiva to be grasped with fixation forceps, without wincing.

CASE XI (out-door service).—T. B., male, aged forty; extensive burn of cornea and conjunctiva from hot metal. Eye and lids exceedingly sensitive, and would not permit them to be touched. Cocaine, ten drops, instilled, and, after an interval of six minutes (timed), allowed thorough examination to be made. Said he was entirely free from a pain that had been intense for two days.

CASE XII (out-door service).—S. R., male, aged twenty-five; traumatic keratitis. Had been injured by a fragment of metal. Could not face the light. Great pain, photophobia, and lachry-

mation. Cocaine instilled (8-10 drops) once, and after five minutes (timed) could open eye, and said he was free from pain.

CASE XIII (out-door service).—W. McC., male, aged thirty; foreign body imbedded in cornea. Cocaine instilled twice, interval three minutes. Seven minutes after first instillation, cornea completely anæsthetic as well as conjunctiva. Removal of foreign body absolutely without pain, although it was firmly imbedded, and a good deal of epithelium was scraped off.

CASE XIV (out-door service).—C. C., male, aged sixteen; foreign body in cornea. Very nervous and apprehensive. Cocaine instilled once. In three minutes (about) cornea anæsthetic. Foreign body removed without resistance, and with no pain.

In five cases of sensitive throat I have been enabled not only to use the mirror, but to prick the mucous membrane with a sharp-pointed instrument without pain and with very little "gagging."

COCAINE HYDROCHLORATE, THE NEW LOCAL ANÆSTHETIC.

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THE two patients whose cases are herewith reported, in which the new local anæsthetic—the hydrochlorate of cocaine—was used, were operated on by Professor Gruening, before the eye clinic of the New York Polyclinic, at Mount Sinai Hospital:

CASE I.—A colored woman, aged forty-five, with double over-mature cataract, was placed upon the operating-table, and three drops of a two-per-cent. solution of cocaine hydrochlorate were instilled into each eye every five minutes for fifteen minutes. Twenty minutes after the first instillation the speculum was introduced into the right eye, the conjunctiva was seized with a fixation-forceps, and a large section was made with von Graefe's cataract-knife, without any shrinking or expression of pain on the part of the patient. While the iridectomy was being done, she winced and gave a slight expression of pain. The left eye was then operated upon with equally satisfactory results, but the pain of the iridectomy seemed less in the left than in the right eye.

CASE II.—The patient was a German, fifty years old, with glaucoma of the right eye, attended with excessive tension and ciliary staphyloma. He was blind in the glaucomatous eye. Four drops of the same solution as had been used in Case I were instilled into the right eye every five minutes for twenty minutes. Thirty minutes after the first instillation, the sound eye being uncovered, the speculum was introduced and the fixation-forceps applied. The patient objected strenuously to the speculum; in fact, squeezed it out, and shrank from the application of the forceps. A pad of borated cotton was then placed over the sound eye, the speculum was introduced, the fixation-forceps was applied, and the section was made, without any expression of pain from the patient. Immediately before the second attempt, four more drops of the solution were instilled into the eye. The iridectomy, in this case also, was attended with pain.

In Dr. Gruening's office, after the instillation of two drops of a two-per-cent. solution, a foreign body was removed from the cornea of a hyperæsthetic man, without pain.

In a case of episcleritis, after an instillation of the same sort, there was marked diminution of sensibility in the conjunctiva, although there was still pain on massage.

In the first three instances the hydrochlorate of cocaine certainly accomplished all that has been asserted for it, viz.: anæsthesia of the conjunctiva and cornea. In the case of episcleritis, the anæsthesia, although marked, was not so complete as in the other cases. Whether or not its anæsthetic effect is always diminished in the case of the tissues mentioned when they are in a pathological condition, remains to be seen.

In the case of the woman with cataract, there was less pain caused by the iridectomy in the left eye than in the right; and the left eye, as has been stated, was the second one to be operated on.

It is possible that the anæsthetic effect of the drug might, by imbibition of the solution, have reached the iris tissue in the left eye, as there had been an opportunity for absorption to go on for a longer time.

The solution used in these cases was made by Eimer & Amend, of New York.

The honor for this new and brilliant addition to ophthalmology is due to Dr. Koller, of Vienna, a young man who is still pursuing his studies in that city.

Book Notices.

Elements of Practical Medicine. By ALFRED H. CARTER, M. D., Lond., M. R. C. P. L., etc. Second edition. London: H. K. Lewis, 1883. Pp. xvi. 427.

The Same. Third edition, revised and enlarged. New York: D. Appleton & Co., 1884.

ALTHOUGH this work does not profess to be a complete treatise on the practice of medicine, it is too full to be called a compend; it is rather an introduction to the more exhaustive study embodied in the larger text-books. An idea of the degree to which condensation has been carried in it can be gathered from the statement that but twenty-one pages are occupied with the diseases of the circulatory system. If the reader gets the impression that the physical signs are given somewhat too meagerly, it is to be said that, by way of compensation, the symptomatology in general is considered with admirable perspicuity and good judgment. The author recognizes a presystolic heart murmur, and says that, while it is almost always associated with organic heart disease (mitral obstruction), it is occasionally found in conjunction with mere functional dilatation of the left side of the organ. He does not seem to have noticed Flint's explanation of the occurrence of such a murmur with aortic regurgitation and no mitral disease.

Leucocythæmia is dismissed with one page—wisely, perhaps, since we know so little about it; and of that other almost unknown quantity in medicine, scrofula, the author has with equal prudence abstained from saying much. He admits such a condition as scrofulosis, but thinks it has no necessary connection with tuberculosis. He is a believer in the germ-theory of disease, and speaks of Koch's investigations and discoveries as very important, to him almost conclusive.

Notwithstanding the condensed make-up of the book, it is quite comprehensive, including even cutaneous and venereal diseases. It contains much valuable information, and we may add that it is very readable.

Clinical Notes on Cancer, its Ætiology and Treatment. With special reference to the Heredity Fallacy and to the Neurotic Origin of most Cases of Alveolar Sarcoma. By HERBERT L. SNOW, M. D. (Lond.), etc., Surgeon to the Cancer Hospital, Brompton. London: J. & A. Churchill, 1883. Pp. 96.

In this little book the author has set forth some exceedingly interesting and valuable facts regarding cancer, drawn from several years of clinical study. The work is not pathological, but clinical, and will therefore be found useful by the general practitioner. Considerable vigor is displayed in the demolition of what the book calls the "heredity fallacy," and the idea of a cancerous diathesis, or "a peculiar habit or condition of the body, of which the malignant deposit was only the local manifestation"; and a chapter is devoted to the neurotic origin of alveolar cancer. The author's ideas upon the latter subject are tersely stated in the following passage: "I may mention (as pointing out its diagnostic value, and how one learns to expect it in these cases) that several times I have been at first considerably puzzled when a patient has appeared with supposed uterine cancer, yet without any previous worry, trouble, or hard work. An examination has solved the mystery, showing the rectum to be the seat of disease."

The work is full of valuable hints, and will repay a careful reading.

On Malignant Disease (Sarcoma and Carcinoma) of the Larynx. By HENRY T. BUTLIN, F. R. C. S., Assistant Surgeon and Demonstrator of Diseases of the Larynx, St. Bartholomew's Hospital. London: J. & A. Churchill, 1883. Pp. 64.

THIS is a continuation of a previous work, by the same author, on sarcoma and carcinoma. Having exceptional opportunities for the study of tumors, he has endeavored to write a "tolerably complete life-history of sarcoma and carcinoma," assuming as a basis of distinction between the two diseases that the one is of connective-tissue, the other of epithelial origin. In order to limit the wide scope of the work and enable him to perform it piecemeal, and yet furnish each separate fragment in a complete form, he has thought best to select one particular organ or tissue, and work out the life-history of the malignant tumors of that organ or tissue, before proceeding to another.

The testis, the bones, the tongue, the œsophagus, and the tonsils have already been studied, and in this volume the work is made to include the larynx. The author has made a careful study and analysis of all trustworthy cases obtainable, and has considered the diseases from both a microscopical and a clinical standpoint, including the question of the propriety and advisability of extirpation of the whole organ. The book shows evidence of earnest and well-directed work, and can not fail to prove an important addition to the literature of malignant diseases.

BOOKS AND PAMPHLETS RECEIVED.

The Brain and the Nerves; their Ailments and their Exhaustion. By Thomas Stretch Dowse, M. D., F. R. C. P. E., Fellow of the Medical Society of London, etc. New York: G. P. Putnam's Sons, 1884. Pp. 150. [Price, \$1.50.]

Announcement of the Medical College of Virginia, Session of 1884-'85.

Announcement of the Atlanta Medical College, Session of 1884-'85.

Transactions of the Medical and Chirurgial Faculty of the State of Maryland, Eighty-sixth Annual Session, 1884.

Transactions of the American Otolological Society, Seventeenth Annual Meeting, 1884. Vol. 3, Part 3.

Annual Announcement of the Course of Study in the Medical Department of Yale College, 1884-'85.

THE
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MR. VANDERBILT'S GREAT GIFT TO THE COLLEGE OF
PHYSICIANS AND SURGEONS.

In view of the singular unanimity with which—at all events, up to within a very short time past—men of wealth have ignored medical colleges in their benefactions, there are few things, we imagine, likely to take the profession so much by surprise as the news that a single individual had given half a million dollars to one of those institutions. Yet such is the announcement that we have the pleasure of making to our readers. Mr. William H. Vanderbilt has enriched the College of Physicians and Surgeons in the city of New York by a gift of that sum. By so doing he has conferred a boon not only upon the college, not only upon the profession of medicine, but also, and chiefly, upon the community; for the fruition of his generous deed will show itself most decidedly in the improved qualifications of generations of graduates yet to come, and, since old Homer sung, nobody but an occasional unmitigated scoffer has raised the shadow of a doubt as to the supreme importance of the highest possible development of the healing art.

By this act, therefore, Mr. Vanderbilt has most pointedly shown his title to the gratitude of his fellow-citizens. We are not of those who ignore the evils that are thought to go hand in hand with the amassing of huge fortunes by individuals—we believe them to be real and not imaginary; but it is a great mitigation of those evils for a man of vast wealth to give a tithe of his possessions to the cause of suffering humanity. It is one of those touches of nature that make the whole world kin. The humblest beneficiary of medical care—and they are to be counted every year by the million—may now profit directly, in the heightened quality of his dole, by this one act of a rich man. Surely such a deed should go far to reconcile the poor to a splendor they must look upon but may not share. Let us hope that, so far as material benefactions are concerned, medicine has at last entered upon an era of good fortune; and, indeed, there seems to be good ground for the hope when, within the space of a single year, Sir Erasmus Wilson's munificent bequest to the Royal College of Surgeons, Mr. Carnegie's gift to the Bellevue Hospital Medical College, and now this princely endowment of the College of Physicians and Surgeons by Mr. Vanderbilt, have all been chronicled.

We will not speculate as to whether or not the specific direction taken by Mr. Vanderbilt's generosity was the result of a deliberate judgment on his own part, or whether it is to the intercession of some member of its own faculty that the College of Physicians and Surgeons is indebted for its good fortune; it is enough for us to know that the gift has been wisely bestowed. The College of Physicians and Surgeons is

seventy-seven years old, and its career during those seventy-seven years has been that of an institution honestly striving to equip its pupils with the best medical education that the condition of our country would allow of. That its success in this attempt has not been below what circumstances would reasonably lead one to expect is amply attested by the status of its graduates. But in the struggle it has yearly seemed to be more and more handicapped by its comparative remoteness from any hospital. Now, however, this clog is to be cast off—we learn that the college has acquired the title to a large tract of land in the immediate vicinity of the Roosevelt Hospital (of which its president is *ex officio* a member of the board of governors), and we have no doubt that suitable buildings will be put up on it at once. This means, undoubtedly, a close alliance between the two institutions, if not their virtual amalgamation, with the result of adding notably to the resources of the college in the way of clinical teaching.

When a man—or, for that matter, a corporation—falls heir to a snug sum, there is commonly no lack of kind friends to offer advice as to the ways in which the money may be used to advantage. Granting that their recipient should usually feel grateful for such attentions, we are convinced that in this instance the fortunate institution is abundantly capable of shaping its own ends, and we look forward with confidence to its making the best possible [use of its new-found wealth. While we heartily congratulate the college, we can not overlook the higher significance of the occasion of that congratulation which is so admirably set forth by Dr. Flint in the foot-note to his paper published in this issue of the journal.

FACTS AND THEIR APPRECIATION.

IN Dr. Flint's admirable presentation of the points connected with the doctrine of the parasitic origin of cholera, which will be found in this issue of the journal, a suggestion is thrown out that seems to us to embody an idea which ought to be more borne in mind than it has been of late years. "In order to discuss and decide upon these questions," he says, "it is by no means essential that we shall have practically verified the microscopical examinations on which rests the evidence of the parasitic doctrine. In courts of law, the judges, advocates, and juries are not themselves observers of facts involved in cases on trial. They deal with facts as established by testimony. So it must be with scientific facts. They are to be canvassed, and either accepted or rejected on the statements of competent witnesses." Further on, he adds: "When in London during the past summer, I visited the Biological Department of the Health Exhibition at Kensington Gardens, and I there saw a specimen of the so-called cholera bacillus. It had been prepared by Koch himself. The demonstration was interesting, but it would be absurd to claim therefrom any advantage in judging of the merits of the doctrine which assumes that this organism is the essential cause of epidemic cholera."

And yet, we venture to say, there are very few members of the profession who would read with deference a statement

on such a subject, unless it came either from a skilled observer or from a man who had attained to the commanding position occupied by the gentleman whose words we have quoted. This is all wrong. The tendency has been too great of late years, doubtless from the backward swing of the pendulum away from the old times of authority, to subordinate the reasoning powers to the mere observation of physical processes. It is equivalent to saying—as the vulgar are very much given to saying—that nobody is qualified to criticise a picture unless he can paint a better one himself. We are far from underrating the great debt that modern medicine owes to pure observation; indeed, we are quite in accord with the feeling that, just at this juncture, competent observation is the chief thing needed to advance our art. But we may be allowed to add that it is not the only thing needed. Blocks of stone may be carved with the greatest nicety, but the real work of constructing an edifice is done by him whose hands are entirely unused to the actual play of tools. The parallel must be reversed, it is true, for in material building it is the architect's conception that must precede the mechanical work, while in science the preparation of the materials has to go before the constructive process; but the deduction remains obvious, that the greatest service is rendered not by him who digs out facts, but by him who welds them together. We must, therefore, deprecate the infatuation which honors only the discoverer, and gives the cold shoulder to the critic.

NEWS ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending October 21, 1884:

DISEASES.	Week ending Oct. 14.		Week ending Oct. 21.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid Fever.....	42	13	50	13
Scarlet Fever.....	39	5	25	5
Cerebro-spinal meningitis....	2	2	6	4
Measles.....	6	6	36	4
Diphtheria.....	45	29	43	30
Small-pox.....	1	0	0	0

The New York Obstetrical Society.—At the annual meeting, held on Tuesday evening, the 21st inst., officers were elected for the ensuing year as follow: President, Dr. William M. Polk; vice-presidents, Dr. Henry F. Walker and Dr. Alexander S. Clarke; secretary, Dr. Frank P. Foster; corresponding secretary, Dr. Emil Noeggerath; treasurer, Dr. Edward L. Partridge; new members of the committee on admissions, Dr. James B. Hunter, Dr. Horace T. Hanks, and Dr. Robert Watts. The by-laws were so amended as to do away with the June meeting hereafter.

The Medical Department of the University of Pennsylvania.—For some weeks past there have been rumors of an intention on the part of the governing board of the university to extend a call to Professor William Osler, of McGill University, Montreal, to take the chair of clinical medicine; and it is now definitely announced that Dr. Osler has been called to the chair. We are convinced that the choice will prove to have been an admirable one.

The Death of Professor H. von Zeissl, the distinguished syphilidologist, is announced as having taken place at Vienna on the 23d of September, at the age of sixty-seven years.

Mr. Lawson Tait's Operations at Bellevue Hospital.—We are glad to be able to state that the two patients from whom Mr. Tait lately removed the uterine appendages, on the occasion of his making the clinical remarks which we published last week, have both recovered, making a happy issue out of the doubt that Mr. Tait felt as to the safety of doing the operation in a large general hospital and in the presence of a great number of spectators.

The German Universities.—The "Lancet" learns that Professor H. Kronecker, of Berlin, has accepted a nomination to the chair of physiology at Berne, succeeding Professor Grützner, who goes to Tübingen, and that Professor Hermann, of Zürich is to take the same chair at Königsberg, succeeding Professor von Wittich.

The Contagious Pleuro-pneumonia of Cattle now prevailing in several of the western States is said to have been traced to a herd of cattle sent west from Baltimore. All the affected cattle west of Ohio are stated to be thoroughbred Jerseys.

The Land lately purchased by the College of Physicians and Surgeons comprises the western portion of the block bounded by Ninth and Tenth Avenues and Fifty-ninth and Sixtieth Streets, directly opposite the grounds of the Roosevelt Hospital, which include the whole of the block below. It is understood that the new college building will cover a space measuring two hundred by three hundred feet.

The New York Hospital Training School for Nurses.—We learn that Miss Lizzie Johnson, a graduate of the school, has been appointed superintendent of the training school for nurses of the Buffalo City Hospital; also that Miss Emma L. Warr, another graduate of the school, has lately gone to St. Louis, to establish a training school in connection with the St. Louis City Hospital.

The Relative Value of Facts and Opinions, as estimated by one of our London contemporaries, may be learned from the following passage, which we find in its review of the second volume of Dr. Morell Mackenzie's work on "Diseases of the Throat and Nose": "That one practitioner in Illinois has twice treated nasal polypus with perchloride of iron, while another has been no less successful in Baltimore with chromic acid, strikes us as a form of difference which may fitly be compared to the immortal contention of Tweedledum and Tweedledee, and certainly forms a sorry substitute for the deliberate opinions of Dr. Morell Mackenzie."

Changes in the Paris Hospitals.—The "Union médicale" learns that, in consequence of the death of M. Moreau, M. Jules Falret, physician to the Bicêtre, has been transferred to the Salpêtrière, and that M. Charpentier, adjunct physician to the Salpêtrière, has been appointed physician to the Bicêtre.

Cremation in Italy.—It is announced that the Italian Government has ordered the building of a crematory, on the Gordini-Guzzi system, for the cholera lazaretto at Varignano.

Precautions against the Introduction of Diseased Cattle into Kansas.—A proclamation by the Governor of Kansas forbids the importation of cattle from Kentucky, Iowa, Nebraska, or Missouri until they have been submitted to a detention of sixty days at the point of introduction, and have been certified by the State veterinarian to be free from disease. The proclamation also forbids the introduction of Jersey cattle.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from October 12, 1884, to October 18, 1884:*

NORRIS, BASIL, Lieutenant-Colonel and Surgeon. Relieved from duty as Attending Surgeon, Washington, D. C., and ordered for duty as Medical Director, Division of the Pacific and Department of California, relieving Surgeon E. I. Bailly. Colonel Bailly, on being relieved, will assume the duties of Attendant Surgeon at San Francisco, Cal. S. O. 242, A. G. O., October 15, 1884.

SPENCER, WILLIAM C., Major and Surgeon. From Department of Dakota to Department of the East. S. O. 242, A. G. O., October 15, 1884.

GODDARD, CHARLES E., Major and Surgeon. To be relieved from duty at Jefferson Barracks, Missouri, and to report for duty in Department of Dakota. S. O. 242, A. G. O., October 15, 1884.

McLELLAN, ELY, Major and Surgeon. From Department of the East to duty at Cavalry Depot, Jefferson Barracks, Missouri. S. O. 242, A. G. O., October 15, 1884.

McKEE, JAMES C., Major and Surgeon. Granted leave of absence for one month, with permission to apply at Division Headquarters for one month's extension. Par. 1, S. O. 149, Department of the Columbia, October 3, 1884.

WOLVERTON, W. D., Major and Surgeon. Granted one month's leave of absence, to take effect when his services can be spared by his post commander. Par. 4, S. O. 211, Department of the East, October 16, 1884.

HAYARD, VALERY, Captain and Assistant Surgeon. Assigned to temporary duty at Fort Schuyler, New York Harbor, N. Y. Par. 2, S. O. 211, Department of the East, October 16, 1884.

PORTER, J. Y., Captain and Assistant Surgeon. Granted leave of absence for one month on surgeon's certificate of disability, with permission to leave the limits of the department. Par. 3, S. O. 138, Headquarters Department of Texas, October 9, 1884. (Confirms telegraphic order of same date.)

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending October 18, 1884:*

BRUSH, GEORGE R., Surgeon. Assigned to temporary duty at the Naval Laboratory, October 11, 1884.

BURBANK, CHARLES H., Medical Inspector. Detached from the Brooklyn and placed on waiting orders, October 15, 1884.

CLARK, JOHN H., Surgeon. Detached from the Lackawanna and detailed as Fleet Surgeon of the Pacific Station, October 17, 1884.

COOKE, GEORGE H., Surgeon. Ordered to the Lackawanna, October 17, 1884.

EDGAR, JOHN M., Passed Assistant Surgeon. Ordered to the Receiving Ship Franklin, October 11, 1884.

HUPSON, A., Medical Inspector. Detached from the Lancaster and placed on waiting orders, October 14, 1884.

HUGG, JOSEPH, Surgeon. Placed on waiting orders, October 13, 1884.

LOVERING, P. A., Passed Assistant Surgeon. Detached from the Lackawanna and placed on waiting orders, October 17, 1884.

MARSTELLER, E. H., Passed Assistant Surgeon. Detached from the Monongahela and ordered to the Lackawanna, October 17, 1884.

MARTIN, WILLIAM, Assistant Surgeon. Detached from the Pas-saic and placed on waiting orders, October 14, 1884.

MARTIN, H. M., Passed Assistant Surgeon. Detached from the Brooklyn and placed on waiting orders.

Society Meetings for the Coming Week:

MONDAY, October 27th: Medical Society of the County of New York (annual); New York Academy of Sciences (section in Physics, Astronomy, and Mathematics); Boston Society for Medical Improvement; Lawrence, Mass., Medical Club (private); Cambridge, Mass., Society for Medical Improvement.

TUESDAY, October 28th: American Academy of Medicine (Baltimore—first day); New York Surgical Society; Medical Societies of the Counties of Putnam, Queens, and Rockland, N. Y.; New York Dermatological Society; Jersey City Pathological Society (private); Boston Society of Medical Sciences (private).

WEDNESDAY, October 29th: American Academy of Medicine (second day); New York Pathological Society; American Microscopical Society of the City of New York; Auburn, N. Y., City Medical Association; Medical Society of the County of Gloucester, N. J.; Berkshire, Mass., District Medical Society (Pittsfield); Middlesex, Mass., North District Medical Society (Lowell); Worcester, Mass., Association for Medical Improvement (private); Cumberland County, Me., Medical Society.

THURSDAY, October 30th: Massachusetts Medical Benevolent Society (annual—Boston).

SATURDAY, November 1st: Manhattan Medical and Surgical Society (private); Miller's River, Mass., Medical Society.

Proceedings of Societies.

NEW YORK ACADEMY OF MEDICINE.

Meeting of October 16, 1884.

The President, FORDYCE BARKER, M. D., LL. D., in the chair.

A Bronze Bust of the Late Dr. J. Marion Sims.—A copy of a marble bust by Du Bois, of Paris, was presented to the Academy by Dr. H. MARION-SIMS.

THE PRESIDENT, in behalf of the Academy, accepted the generous and beautiful gift, made some eulogistic remarks upon the late Dr. Sims, and spoke of the bust as almost a speaking likeness.

DR. WHITE offered resolutions of thanks to the donor, which were unanimously adopted.

A Memoir of the Late Dr. Willard Parker was read by Dr. WILLIAM H. DRAPER. He pictured Dr. Parker as a man of great intelligence, with an honest mind and indomitable will, a lover of freedom, and a believer in the dignity of labor. As a practitioner of medicine, while a surgeon he was also what the English would call "an all-round man." He was broad in his views, had unbounded faith in the possibilities of the healing art, and was enthusiastic as a teacher. He was not what would be called a learned man, but he was what many learned men never became—a wise man. He was always self-possessed; no emergency could disconcert him, no disease appall him. He was a keen and comprehensive observer, and always seemed to see what was best worth seeing. He was a physician of the Hippocratic type: a physician of experience and common sense. It was in his character as a public teacher that Dr. Parker exerted his widest influence; there was something about his enthusiasm which was contagious. He took a special interest in hygiene and public health. He believed that disease was the direct and evident consequence of ignorance or defiance of the laws of health, and that the dissemination of knowledge regarding those laws was the best means for preventing the ravages of

disease. Dr. Parker's name as a surgeon was connected specially with cystotomy for the relief of cystitis, and with the operation for perityphlitic abscess; but surgery for him was rather a part of the equipment of the general practitioner.

Dr. Parker took a deep interest in the question of intemperance in the use of alcoholic stimulants. He recognized in this one of the chief causes of physical degeneracy as well as of poverty and crime. He abstained from the use of liquors himself, believing that he could maintain the highest degree of health without them.

The Therapeutical Effects of the Internal Administration of Hot Water in the Treatment of Nervous Diseases.
—Dr. AMBROSE L. RANNEY read a paper with this title. [See pages 426 and 456.]

Dr. E. C. SEGUIN said he had had but little experience in the use of hot water except in a limited class of cases; he had not used it in cases of destructive nervous disease. It seemed to him there were some points in the paper which were open to discussion. The first was the quality of the agent used. The author had specified the agents which produced heat as warm, hot, very hot, and the actual cautery. Dr. Seguin thought a temperature of 110° to 150° F. could hardly be considered hot, especially as the temperature of the water diminished while it was being swallowed. In the second place, as to the cases brought forward by Dr. Ranney, a large number of them seemed to be cases of neurasthenia, cerebral hyperæmia and anæmia, and functional disturbances of a similar kind. These cases, it seemed to him, constituted one of the most doubtful classes in disease, for many of them were nothing more than cases of mal-assimilation, and here Dr. Ranney employed a combined treatment, including a diet which would of itself tend to correct disturbances of digestion and mal-assimilation. Again, he asked if it was not possible that some of the good effects were due to the water and not to the element of heat. It had been observed that in this class of cases there was often a lack of desire for water—hydroadipsia, as it had been termed by Dr. McElroy—and the patients were often benefited by drinking a larger amount of simple water than their natural thirst prompted them to take. The author had been guided largely in his treatment by the condition of the urine, which was another fact which went to support Dr. Seguin's view. With respect to the use of hot water in the treatment of organic nervous affections he could say nothing, as he had had no experience. As to the theory of the mode of action by reflex influence, he had no doubt there might be some foundation for this, but if a share of the good effect was to be attributed to the washing out of effete material from the system by the fluid taken, and he believed this share to be considerable, the share which remained for the effect of reflex action by the heat in the stomach could not be very great.

He wished to say a word in defense of cold water. He could see no objection to ice-water, and on the same principle on which he questioned the influence of the degree of heat mentioned, namely, that the fluid did not reach the stomach of the same temperature which it possessed when taken into the mouth.

Dr. R. W. AMIDON had for some time used hot water in the treatment of nervous phenomena connected with dyspepsia or the gouty or rheumatic diathesis. He agreed with the last speaker that the action of the hot water as a derivative or counter-irritant was extremely doubtful. He did not believe that when it reached the stomach it was sufficiently hot to produce a counter-irritant effect. He understood the author to say that the beneficial effects of the hot water were obtained only after six months, but his own experience taught him that counter-irritants acted much sooner than that. He believed the

hot water acted more as a diluent; that it increased destructive metamorphosis and the powers of assimilation.

Dr. L. PUTZEL thought the theory concerning the action of hot water taken into the stomach, as advanced by the author of the paper, proved too much, for he had said that the agent had acted beneficially both in cases of cerebral hyperæmia and in those of cerebral anæmia. He did not think it could act beneficially in opposite conditions. He would lay some stress upon the point made by Dr. Amidon, that an agent which acted by its irritant effects should produce its results quickly. He would suppose that the best results from the use of hot water would be obtained in the commencement of the treatment, as afterward the stomach would become habituated to the irritation.

Dr. W. R. BIRDSALL believed there was a good deal of efficacy in hot water, as well as in cold water, when used as a therapeutical agent. He was not prepared to deny the influence which it had been stated heat played in this mode of treatment. But what he had been most anxious to hear was statistics of a clear character, which would enable us to judge of the effects of hot water, particularly in the class of cases which were strictly disorders of the nervous system, such as locomotor ataxia. But, unfortunately, the patients whose cases the author had related had been submitted to a combination of treatment, and not to that by hot water alone, and we were therefore unable to tell what part had been played by this agent in the production of the beneficial results. In the cases of functional disturbance of the nervous system it would be difficult to say how much of the good result was to be attributed to the heat and how much to the diluent properties of the agent. With regard to whether the water reached the stomach in a hot state, he thought it might begin to produce the effects due to its heat the moment it came in contact with the mucous membrane in its passage down to the stomach. His impression was that it was not the influence of the heat upon the vaso-motor system alone which caused the results; it might also have produced some influence upon another system of nerves.

Dr. C. L. DANA had used hot water in cases of nervous disorder associated with gastric disturbances, particularly in hysterical women, but he had not been impressed with its efficacy. The want of favorable results, however, might possibly have been due to lack of carrying out the treatment as persistently as the author recommended. He believed that the paper would result in benefit in suggesting a mode of treatment for a class of cases which usually resisted almost all kinds of treatment, and, as Dr. Wilks had years ago pointed out, those agents which were not directed immediately to the nervous system were more likely to prove efficacious in the treatment of this class of disorders.

Dr. J. L. CORNING had obtained good results from the use of hot water in cases of so-called neurasthenia with concomitant gastric disorders. He had attributed the good effect to the influence produced upon the mucous membrane of the stomach by the hot water. He had obtained good results in from six weeks to two months.

Dr. JOHN SCOTT, of San Francisco (present by invitation), had employed hot water in checking emesis in general, and that after the administration of ether in particular. He had also during the past thirty years given water in another form, in the form of a milk diet, with great benefit in many disorders.

Dr. RANNEY, closing the discussion, said that any one who would take hot water as he had recommended would be convinced after drinking it that it reached the stomach in more than a warm state. Hot water could not lose much of its heat before it reached the stomach. It had been suggested by some of the speakers that the beneficial effects produced by the hot

water were due to its diluent qualities, but he had obtained results with four goblets of hot water a day which could not have been obtained by as many gallons of water in its ordinary state. He had been misunderstood to say that the effects were produced only after the lapse of six months. What he did say was that in some cases it took from five to six weeks to get marked effects, and in some six months to produce the full effects. The theory which he had suggested concerning the action of the agent seemed to have been the chief basis of the discussion and adverse criticism. He had advanced the theory simply as being to him the most plausible, but it might be entirely incorrect, yet the facts as to the results of treatment by the swallowing of hot water existed. As to Dr. Putzel's criticism, that benefit could not be produced in opposite conditions, in both cerebral hyperæmia and cerebral anæmia, he would say the agent had a tendency to restore the parts to their normal condition, and in so doing would tend to relieve any abnormal condition which might exist in the brain. One man who drank whisky would become bloated and fat, while another taking the same agent would lose flesh and become thin. It had been doubted whether his cases proved anything, as different agents were employed in the treatment at the same time. But the other measures had failed to produce any benefit until combined with the use of hot water. It followed, therefore, either that the hot water alone had produced the beneficial result, or that hot water combined with other remedies had done so.

Dr. T. H. BURCHARD asked Dr. Ranney whether he had observed any permanent disturbance of the digestive system produced by the hot water when used for some time, and also whether he had observed that it caused a tendency to internal hæmorrhages. He had seen many patients at Saratoga Springs who had been treated by this method, and, after five or six months, had experienced disturbance of digestion, lost flesh, and become greatly reduced in health. Others had shown a tendency to gastric and intestinal hæmorrhage.

Dr. RANNEY replied that he had never known intestinal hæmorrhage to occur in a patient to whom he had administered hot water, and he had treated a great many patients in this manner; nor had he known it to produce permanent disorder of the digestive powers. He had known patients to lose weight rapidly, but it was due to the restricted diet which had been purposely recommended, and they quickly regained their weight on returning to a general diet.

A New Local Anæsthetic.—Dr. C. R. AGNEW made some remarks upon hydrochlorate of cocaine as an anæsthetic when applied to the conjunctiva. Since attention had been called to the subject by a letter published in the "Medical Record" for October 11th, he had employed the agent in a number of cases in which he had performed operations upon the eye, and both he and the observers had been satisfied and greatly astonished at the results. He felt that nothing of greater value had been given to surgery since the discovery of anæsthesia with ether and chloroform. He distinctly disclaimed any priority in its use in this city. The action of the agent was demonstrated upon two gentlemen present at the meeting. It had not been positively determined whether it was capable of producing local anæsthesia in wounds of the skin.

Dr. BURCHARD said it had produced anæsthesia in the finger, the seat of a felon, so that he had been enabled to open it without pain to the patient.

Dr. BIRDSALL had been in the habit the past two years of employing coca to produce a benumbing effect upon the mucous membrane of the air-passages.

The PRESIDENT referred to the effects of the fluid extract in clearing the voice.

NEW YORK COUNTY MEDICAL ASSOCIATION.

Meeting of October 20, 1884.

The President, Dr. WILLIAM DETMOLD, in the chair.

The Parasitic Doctrine of Epidemic Cholera.—Dr. AUGUST FLINT read a paper with this title. [See page 451.]

After the reading of the paper, the PRESIDENT said he had no doubt that he expressed the feelings of all those present in extending thanks to Dr. Flint for the very interesting and valuable paper which they had had the pleasure of listening to. While he did not feel able to open the discussion on the subject, he would venture to say that, in his mind, there was little doubt that there existed a certain relationship between summer diarrhoea and Asiatic cholera. Affections of all the mucous membranes, when they occurred repeatedly under favoring circumstances, were liable to become contagious. Thus, take simple catarrhal ophthalmia, which here was a simple local disease; in a locality where the climate and other circumstances favored its development, as in Egypt, it became contagious. In the country mentioned (Egypt), where the eyes were much exposed to dust and to the reflection of the sun's rays from the sand, ophthalmia, which probably was at first but a simple catarrhal affection, became contagious, and had been carried to other parts of the world, especially during the Napoleonic wars. He supposed that cholera infantum stood in a similar relation to Asiatic cholera; at any rate, it would be interesting to ascertain whether the dejections in cholera infantum contained a microscopic organism resembling or analogous to that found in Asiatic cholera. That the diarrhoeas here which proved so fatal among children should, in a climate like that of India, become contagious, like Asiatic cholera, would not be at all wonderful.

He then said that papers upon the same subject had been promised by Dr. Janeway and by Dr. Leale, to be read at an approaching meeting of the association, and at that time perhaps the members would be better prepared to take up the discussion.

Dr. E. G. JANEWAY said the arguments for and against the parasitic theory regarding Asiatic cholera had been so thoroughly considered by the author of the paper that scarcely any ground was left for discussion. He would allude a little more particularly to the means taken for the prevention of cholera in this city in 1866-'67. Having been an interne in the workhouse on Blackwell's Island the year previously, he was acquainted with the conditions which favored the development of cholera there, and informed the sanitary officer, who had them corrected. It was the habit to use pails for the dejections of the inmates, which were allowed to stand in the room until the next day, when they were carried to the river and there emptied. There were at the same time persons in the workhouse who had returned from the war and were suffering from scurvy, and acid was given with their food as a remedy against that disease—the remedy not then being supposed to have any influence upon the cholera. As soon as the sanitary officers had been informed of the condition of things, the Chairman of the Committee on Inspection ordered that the pails be left out of the rooms, that disinfectants be used, and that every person, as soon as he was taken sick with cholera, should be transported to the hospital and isolated; and thus it was not long before cholera entirely disappeared from the institution. Dr. Janeway thought there was some danger of the public getting the impression that the only, or nearly the only, source of spread of cholera was through the drinking-water, or the food which became contaminated through the water. While this might be one of the principal modes of spreading the disease, it was not the only one, and could not have acted during the existence of the cholera

in the workhouse on Blackwell's Island in the two years mentioned. He also believed that, while heat might be an efficient way of killing the germ of the disease, it could not be applied in the way of desiccation so as effectually to stop the spread of an epidemic in a large city, and it was not this means by which the Sanitary Board of New York was enabled to stamp out the cholera when it was prevalent here in 1866-'67. Probably the only way in which heat could be used, to be of any practical benefit, would be to burn all the clothing and soiled articles which had been worn by persons sick with cholera. The same principles applied here which applied in the prevention of the spread of small-pox, typhus fever, and other contagious diseases. He recalled an example in which a pair of slippers must have been the only origin of an outbreak of small-pox at a place fifty miles distant from where the owner had been sick with the disease. The small articles, therefore, would have to be looked after as well as the larger ones if we wished to effectually prevent the spread of an epidemic of cholera, small-pox, etc. Again, there was a tendency on the part of some physicians to sympathize with the relatives, and, when a patient was sick with a disease of a suspicious kind, to give him the benefit of the doubt, and not regard it as small-pox, typhus fever, scarlet fever, or cholera, until time had proved it certainly to be such; and by taking this action they perhaps unintentionally permitted the spread of a dangerous contagion. As an officer of the Board of Health, he had learned of more than one instance in which a physician had regarded a dangerous contagious disease as an innocent or mild one in the beginning, and had thus been the indirect cause of the death of a number of persons. Each individual physician should hold himself responsible for every case of disease of a suspicious character which came under his observation, and thus assist in effectually establishing a quarantine against cholera, small-pox, etc. The city should pay the patient for any loss he might incur by permitting the sanitary officers to burn soiled clothing. So far as the germ-theory of cholera was concerned, Dr. Janeway's convictions were in accord with those of the author of the paper.

The PRESIDENT said that when the cholera first made its appearance in New York in 1866 the orders given for the purpose of stamping it out were, to cast the dejections into the water-closet and to burn the clothing. The first measure—to cast the dejections into the water-closet—seemed to him to be an ineffectual way to prevent the spread of the disease; it was more likely, by going into the sewers, to result in a fresh outbreak at distant points. He therefore suggested that the dejections first be disinfected. With regard to the second measure—that all the clothing and bedding be burned—it also seemed hard that a poor woman should be compelled, perhaps, to burn her last quilt for the sake of protecting a wealthy city against the possibility of the spread of the cholera. The city was therefore induced to pay for all soiled clothes or to substitute new ones, and the result was that the family, not losing anything by the transaction, had no object in concealing soiled articles, brought them forward, and, perhaps, even some that belonged to their neighbors. These two measures he believed to have been of the greatest importance in stamping out the cholera during the epidemic in question.

Dr. C. A. LEALE wished to bear testimony, with Dr. Flint, to the great service rendered the city by the Metropolitan Board of Health in 1866-'67. At that time he was attending cases of cholera at several different places, and among others one at West Fifty-second Street. Here eighteen cases of Asiatic cholera came under his immediate observation, with five deaths. He struggled against the disease, laboring night and day, the usual means of fumigation and disinfection then recommended being resorted to without avail, and at last he laid the matter before

the Board of Health. The late Dr. Dalton then came over with all of his assistants and completely enveloped the house in chlorine-gas, and not a single case of cholera occurred in the neighborhood subsequently.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Meeting of September 17, 1884.

(Concluded from page 446.)

Dupuytren's Contraction of the Fingers.—Dr. W. MURPHY JANEWAY read the following report of a case that had occurred in the Polyclinic service of Dr. C. K. Mills:

Dr. W. W. Keen, in one of the most valuable papers on "Dupuytren's Contraction" * published in recent years, states that he was able to find, exclusive of his own cases, twenty-six



FIG. 1.

in number, only ninety-five other recorded cases. It has been, therefore, thought worth while to put the following additional



FIG. 2.

case briefly on record. The history points to a rheumatic or rheumatico-gouty origin of the affection.

H. B., aged seventy, married, born in Ireland, had one sister

* "The *Ætiology and Pathology of Dupuytren's Contraction of the Fingers.*" A paper read before the Philadelphia County Medical Society. By W. W. Keen, M. D. "Philadelphia Medical Times," March 11, 1882.

with a rheumatic history. His father died of pleurisy, and he did not know the cause of his mother's death, or any details of the health history of either parent. He denied syphilis positively, and never injured his hands in any way. He has kept a trimming-store for twenty years, and before that time was in the grocery business. He was in California thirty-five years ago, being one of the "forty-niners." He slept in a tent, and mined for gold for twenty months, but apparently did not suffer, or at least not immediately, from the exposure. For fifteen years he has suffered with rheumatic or rheumatico-gouty pains.

Twelve years ago the little finger of the left hand began to curve inward; contraction soon followed in the ring, and later in the middle finger. The little finger of the right hand also gradually contracted.

When he presented himself at the Polyclinic the joints of his hands and fingers were found to be enlarged. The little finger of the right was strongly flexed; but the trouble was much more marked and extensive in the left hand, the little and ring fingers being drawn in so as to almost touch the palm of the hand, the second finger also being much contracted. (See Fig. 1.*). Ridges were found running to these fingers across the palm. The general strength of both upper extremities was about the same. He had never had any special treatment for the contractions.

Subcutaneous incisions were made into the palmar fascia and its cord-like prolongations by Dr. John B. Roberts. In all, eight incisions were made at a single sitting. The hand was straightened, and kept in a digital splint for six weeks, manipulations also being used. The splint was then used only at nights, and galvanism was applied in the form of the continuous current through the hand, and the current interrupted to the interossei and other muscles. The hand is now capable of being straightened, as shown in Fig. 2, and he also has much improved use of it in flexion and extension.

Dr. MILLS said that many surgeons referred all such cases to traumatism. The chief interest in them was the pathology and causation. He believed that most cases of true Dupuytren's contraction were due to rheumatism or rheumatic gout. Hysterical contraction sometimes resembled it, but continuous nerve pressure on the median nerve would relax this form, although it would subsequently return. Some of the cases called atelectosis also resembled it. Here there were no ridges across the palm, and the contractions could be readily overcome temporarily.

Dr. JOHN B. ROBERTS thought the case showed facts in opposition to the theory of traumatism as a cause, for the man was now under treatment for chronic arthritis of the fingers. It was a pity that the name Dupuytren's had been given to this form of contraction, for, if we called it contraction of the palmar fascia, we at once separated it from the contractions of tendons. A proof of its rheumatic origin was the frequency of its occurrence in those who did no manual labor.

Dr. ANGVEY said the history of the case showed no traumatism. The man had been a shop-keeper, and had the trouble ten or twelve years before consulting a physician. Rheumatism and gout were concerned in the aetiology.

OBSTETRICAL SOCIETY OF PHILADELPHIA.

Meeting of October 2, 1884.

The President, Dr. R. A. CLEMMANN, in the chair.

Submucous and Interstitia Fibro-Cystic Tumor of the Uterus without Hemorrhage.—Dr. B. F. BAER exhibited

* The cuts illustrating this case were kindly furnished by Messrs. P. Blakiston, Son & Co.

specimens from a case of this sort. Mrs. H., aged thirty-six years, had had two children, the youngest being twelve years of age. Four years ago she suffered from severe metrorrhagia which was caused by a submucous and interstitial fibroma of the uterus. This was removed, and, after passing through a severe attack of pelvic inflammation, she recovered. After the removal of the growth her catamenial periods became regular in time and quantity and she remained well until about one year ago, when she began to have a very fetid watery discharge in the intermenstrual periods, with sacral pain and uterine tenesmus. On July 17th, her physician, Dr. R. Armstrong, of Lock Haven, requested Dr. Baer to see her with him, when examination showed the cervix to be of twice its normal size, with swollen and gaping lips, making the os and cervical canal quite patulous. The body of the uterus was as large as at the third month of gestation, but it was not symmetrically developed, being larger on the left side than on the right. The left broad ligament was indurated and seemed to be the seat of an old inflammatory process. Pain had been present in this region since the operation. The sound met with an obstruction at the internal os, and was deflected to the right, passing to a depth of nearly four inches. It could be made to pass around a mass of some kind in the cavity of the uterus, giving an indistinct sensation of the presence of an abnormal growth. Dr. Baer expressed the opinion that, although there had been no hemorrhage, there was a submucous or polypoid fibroma present, and advised its removal. Seven tents were introduced, and twenty-four hours afterward ether was administered, when, with the assistance of Dr. Armstrong, Dr. Walls, and Dr. Ball, he proceeded to remove the tents and explore the uterine cavity. On passing his finger within the internal os, he detected a smooth, oval-shaped mass of tissue resembling in consistence an inverted uterus enlarged to about double its normal size. He carried his finger up with some difficulty, and found the base or attachment of the tumor to be located at the fundus of the uterus, where it was narrowed somewhat, forming a sort of pedicle. The tumor felt rather soft for a fibroma, and this, together with its shape, caused him to suspect inversion of the uterus, and, when he remembered that the organ was sometimes inverted by the operation for the removal of an interstitial fibroid which required great traction, as was necessary in this case four years previously, he became much more anxious to investigate fully before attempting to remove the mass. By very careful and thorough bimanual manipulation he convinced himself that the uterus was not inverted, and that there was no indentation anywhere on its surface. He therefore felt warranted in adjusting the wire of an écraseur around its attachment, and proceeded to tighten it, but the traction and manipulation which were necessary in placing the noose broke the surface of the tumor and exposed a peculiar-looking membrane which resembled the peritonæum. He was alarmed at this, fearing that he had really to deal with a partially inverted womb, and that the smooth membranous structure was the peritonæum. He removed the écraseur, the wire of which had broken, and then passed one finger into the bladder and another into the rectum for the purpose of determining more certainly the condition of the peritoneal surface of the uterus. Now, while an assistant made traction on the supposed tumor, he was enabled to satisfy himself fully that the organ was not inverted. He then removed the tumor by enucleation. As would be seen in the specimen which he presented, there are a number of cysts. These cysts contained the semi-opaque coagulable fluid usually found in fibro-cysts, and gave to the tumor its softness, which, together with its shape and the appearance of the cyst-walls when its surface was broken, made it resemble an inverted uterus. The patient made a good recovery.

The case was very unusual for the reason that, although the uterine cavity was distended by a large submucous tumor which was becoming polypoid, not the slightest hæmorrhage resulted. He did not remember to have met with a similar case. He had, however, met with cases of small polypi where there was no hæmorrhage. Two, indeed, were discovered after the menopause had been fully established, and were worthy of record because of the reflex symptoms which they seemed to induce.

Uterine Polypus without Hæmorrhage; Symptoms of Pregnancy.—One of the cases Dr. Baer alluded to was that of Mrs. C., forty-six years of age, who had been married twenty years, but had never been pregnant. The menopause had occurred one year previous to the date at which he saw her. Soon after the cessation of the catamenia her abdomen began to enlarge and she thought she was pregnant. Various irregular reflex symptoms of pregnancy developed, and she became so convinced that she engaged the services of an accoucheur and nurse, and went into labor in due time. Her physician, Dr. John H. Musser, was unable to discover the least physical sign of gestation, nor anything else which should give rise to the almost perfect labor-like pains which she seemed to have at irregular intervals. He informed her that she was not pregnant. She became indignant, and asked him to call another physician to confirm what he said. He consented, and requested Dr. Baer to see the patient. Dr. Baer excluded pregnancy, but found in the cervical canal a fibrous polypus not larger than an ordinary marble. This he at once removed, and the pains and other signs of gestation immediately subsided.

This was one of those cases of spurious pregnancy which we sometimes saw developed in a sterile woman about the period of the menopause. The desire for offspring was strong. The cessation of the menses started the delusion, and it was kept in existence and made to grow by being constantly fed by a morbidly susceptible nervous system. But there was a local irritation here to account for the reflex symptoms of gestation, as he believed there was in the majority of these rare and interesting cases. It was now three years since this patient was under treatment, and there had been no return of the reflex disturbance.

Uterine Polypus without Hæmorrhage; Severe Reflex Head Symptoms.—The other case to which he wished to refer had occurred in the practice of his friend, Dr. B. Trautman, who kindly asked him to see the patient with him. Mrs. K., aged fifty-two years, had had two children, the youngest being twenty-five years of age. The menopause had occurred four years previously, and she did not complain of the slightest local symptom of uterine disease, but the flushings and other nervous manifestations which often attend this period had not yet subsided. The disturbances, however, which concerned her most, and for which she consulted the doctor, were a pain and pressure of a very aggravated form on the top of the head. Many remedies had been prescribed for the relief of this, but with only temporary benefit. A uterine examination was made, and a polypus resembling in size a small walnut discovered in the canal of the cervix. This was removed some months ago, and he believed the patient had been relieved of the headache and other reflex symptoms which seemed to result from its presence.

The influence which these small growths had on the nervous system was something remarkable, but the absence of hæmorrhage, especially in the first case, was more notable when we recalled the size and location of the tumor, and remembered that death had resulted from the hæmorrhage caused by polypi not larger than a pea, as recorded by Locock, Klob, Courty, and others. He had no doubt some of the gentlemen could recall cases, as he could, where death would doubtless have resulted

from the hæmorrhage produced by a small polypus, had not the cause of it been removed. The following is an illustrative case:

Uterine Polypus attended with great Hæmorrhage.—Mrs. P. consulted him September 20, 1883. She was thirty years of age, and had been married eight years, but had been sterile. Two years ago she began to suffer from menorrhagia with uterine tenesmus. Soon after, she lost blood at irregular intervals, and in large quantities; during the past year she had not often been free from metrorrhagia or a profuse and offensive leucorrhœa. The hæmorrhage would sometimes last a whole month continuously, and leave her so prostrated and anemic that it was thought she could not rally. She had lost thirty pounds in weight, and was blanched in appearance. He would confess that he was surprised to find, on examination, that his patient had a polypus not larger than a Concord grape; but the mucous membrane of the cavity of the uterus was hypertrophied and granular. The pedicle was attached far up in the cavity of the uterus. The tumor was removed by means of the curette. The patient now menstruates regularly.

This case contrasted strongly with the three others in its hæmorrhagic character, and it presented the history commonly met with in these growths. There was no doubt that the location of the tumor had great influence in the causation of hæmorrhage in these cases—much greater than the size of the growth; but much also depended upon its histological character and the condition of the endometrium. Thus, when a fibroid tumor or polypus was situated in the cavity of the uterus proper, more hæmorrhage was likely to result than when it grew from the tissues of the cervix, because, if located in the former position, it was often of the muscular variety and therefore more vascular, and the mucous membrane of the uterine cavity, which was the direct source of the hæmorrhage, was usually hypertrophied and granular, as in the last case narrated. Moreover, when the cavity of the uterus was the seat of a polypus, the uterine and pelvic circulation was stimulated by its presence, somewhat in the manner in which it was affected by the presence of a fecundated ovum which had been blighted; it was a foreign body and the uterus tried to expel it, but by the effort the circulation was excited in that direction and hæmorrhage resulted. His first case, however, furnished an exception to the rule that hæmorrhage attended when the tumor occupied the uterine cavity, but, as tenesmus was present, it was possible that hæmorrhage might have occurred subsequently, had the tumor been allowed to remain.

Dr. WILLIAM GOODELL remarked that the question of hæmorrhage in cases of polypi was a curious one. It seemed less likely when the tumor was in the body of the uterus, and checked the amount of circulation by exciting tonic contractions, than when it was protruding into the vagina like the clapper of a bell. In one case, where the hæmorrhage had produced extreme anæmia, dialysed iron was given to relieve the anæmia, and it also checked the hæmorrhage. In another case an operation was declined, and death resulted from hæmorrhage three days after the visit.

Rapid Dilatation of the Uterine Canal.—Dr. GOODELL read the following paper:

For many years I enlarged or straightened the uterine canal, according to the requirements of the case, either by tents or by Sims's operation, and preferably by the former. Having had several serious warnings in the shape of inflammation following these operations, I began to perform them with fear and trembling. Yet nothing very untoward happened until the year 1878, when two grievous mis-haps befell me.

A charming young lady, the center of a large circle of admiring friends, came from a neighboring State to consult me about

a dysmenorrhœa which grew worse and worse every year. The cervix was so bent forward, and the stenosis of its canal, *per se* as well as by angulation, was so marked, that I unhesitatingly performed Sims's operation. Within a few days septicæmia set in, soon the parotid glands swelled up, and on the ninth day she died. True it is that, at the same time, two piles also were tied, but this latter operation I had, and have, performed so many times with impunity that I was, and am still, disposed to attribute the blood-poisoning to traumatism of the cervix and not to that of the rectum. Hardly had I time to recover from this bitter blow when a case of exhausting menorrhagia fell into my hands. The lady was the young bride of a husband well advanced in life, who doted on her as only old men dote on much younger wives. I dilated the cervical canal with tents and curetted many vegetations from the endometrium. A furious peritonitis set in, and in less than three days this young wife lay dead and the husband was frantic with grief.

The anguish which I felt at the death of these two ladies, and the heartrending scenes which I witnessed at their bedside—scenes which I can not now recall without emotion—urged me to try any remedy that gave promise of efficiency combined with greater safety. In the search for a substitute, I tried rapid dilatation, which Ellinger and others had proposed, and since that year—that *annus ira*—I have not once performed Sims's operation for dysmenorrhœa, and I have so narrowed the field for the use of tents that I now very rarely resort to them. In short, rapid dilatation has proved, in my hands, so safe and so efficient an operation that I wish to urge its claims before this society.

The instruments which I would recommend are two Ellinger dilators of different sizes. These are the best on account of the parallel action of their blades. The smaller of these dilators has slender blades, and it pilots the way for the other, which is more powerful and with blades that do not feather. I have had the beaks of these dilators changed from an obtuse angle to a slight curve, so that it can be reversed within the womb. The lighter instrument needs only a ratchet in the handles, but the stronger one should have a screw with which to bring the handles together. Lest the beak should hit the fundus uteri and seriously injure it when the instrument is opened, the blades are made no longer than two inches, and are armed with a shoulder which prevents further penetration. The larger instrument opens to an outside width of an inch and a half, and it has a graduated arc in the handles by which the divergence of the blades can be read off. The instruments which I now exhibit to you, and which I can recommend highly, have been made, under my supervision, by Messrs. J. H. Gemrig & Son, of this city.

In a case of dysmenorrhœa or of sterility from flexion or from stenosis, my mode of performing the operation of rapid dilatation is as follows: The patient is thoroughly anesthetized, and a suppository containing one grain of the aqueous extract of opium is slipped into the rectum. She is then placed on her back and drawn to the edge of the bed, the knees being supported by her nurse. The light must be good, so that the operator may clearly see what he is about. By the aid of a strong tenaculum, applied through my bivalve speculum, the cervix is steadied and the smaller dilator is introduced as far as it will go. Upon gently stretching open that portion of the canal which it occupies, the stricture above so yields that when the instrument is closed it can be made to pass up higher. Thus by repetitions of this manœuvre, little by little, in a few minutes' time a cervical canal is tanneled out which before could not admit the finest probe. Should the os externum be a mere pin-hole, or be too small to admit the beak of the dilator, it is enlarged by the closed blades of a straight pair of scissors, which are introduced with a boring motion. As soon as the cavity of

the womb is gained the handles are brought together. The small dilator being now withdrawn, the larger one is introduced and the handles are then slowly screwed together. If the flexion is very marked, this instrument, after being withdrawn, should be re-introduced with its curve reversed to that of the flexion, and the final dilatation then made. But in doing this the operator must take good care not to rotate the womb on its axis, and not to mistake the twist for a reversal of flexion. The ether is now withheld, and the dilator kept *in situ* until the patient begins to flinch, when the instrument is closed and removed. A few drops of blood trickle out of the os. Occasionally a slight flow of blood will last for several days after the operation, simulating the menstrual flux. Often this flux is precipitated or renewed if the operation follows or precedes it too soon. The best time for dilatation is, therefore, midway between two monthly periods.

When compared with the cutting operation, this one looks like rough usage, yet the woman rarely needs more than two or three suppositories, and complains merely of soreness for one or two days. To forestall any tendency to metritis, she is kept in bed until all tenderness has disappeared. Pain is met by rectal suppositories of opium and by large poultices laid over the abdomen. I have seen slight pelvic disturbance arise from this operation, but it has always been readily controlled and has not given alarm.

In the great majority of cases I dilate the canal, not to the fullest capacity of the instrument, but to one inch and a quarter. Sometimes in an infantile cervix which does not readily yield and might give way, the handles are not screwed down more than three quarters of an inch or an inch. Tearing of the cervix has happened in two of my cases. In one, that of a virgin, the cervix was split half-way down to the vaginal junction. The other case was that of a multipara whose uterine canal had been nearly closed up by applications of silver nitrate, made by her physician, with the view of curing what he supposed was an "ulceration of the os," but which was a bilateral laceration. The tissues, rendered cicatricial and brittle by the caustic, were torn by the dilator for about half an inch on the right side also. Here the hæmorrhage was free enough to need styptic applications and a tampon. I could have stopped it by wire sutures, but this was not done, as it would have defeated the object of the operation.

For slight dilatations, such as for the office treatment of ante-flexions and of stenosis, or for the introduction of the curette, or of the applicator armed with cotton, the more delicate instrument is quite strong enough, and an anæsthetic is not needed. Sometimes, in a very sharply ante-flexed womb, the dilator can not be made to pass the os internum. This difficulty is overcome by first passing in a surgeon's probe, and then, along it as a guide, the dilator. After a forcible dilatation under ether, the cervical canal rarely returns to its previously angular or contracted condition. Since lateral extension of elastic bodies antagonizes their length, the cervix shortens and widens; and the plasma, provisionally thrown out by the submucous lesions sustained by the dilated part, serves still further to thicken and stiffen its tissues. In other words, the stem-like neck of the pear-shaped womb is shortened, widened, strengthened, and straightened. Hence, for straightening out ante-flexed or congenitally retroflexed wombs, and for dilating and shortening the canal in cases of sterility or dysmenorrhœa arising from stenosis or from a conical cervix, the dilator will be found a most efficient instrument. In its results it is not infallible; I have twice been obliged to repeat the operation, and would have liked to do so in several other cases had the woman permitted it. In a very few instances I have been forced, as a final resort, to nick a pin-hole os externum; but I had not then learned how far

I could safely stretch-open the uterine canal, and the operation of dilatation was not so efficiently performed by me as it is now through a larger and riper experience.

But it is not to cases of dysmenorrhœa that I limit the operation of rapid dilatation. As stated before, I use it to stretch open the canal for the admission of the curette and of spongetents, or for the purpose of making applications to the uterine cavity. In cases needing irrigation of the uterine cavity, I first dilate the canal with this instrument, and introduce the nozzle of the syringe between the separated blades. This gives a free avenue for the escape of the liquid, and robs of its dangers this form of intra-uterine medication. I also resort to the dilator in order to explore the womb with the finger. For instance, in any given case of menorrhagia in which a polypus or some other uterine growth is suspected, instead of using tents, I put the woman under an anæsthetic, and, after the rapid dilatation of the cervical canal to the utmost capacity of the instrument—viz., one inch and a half—am enabled to pass my finger up to the fundus. This is accomplished either by drawing down and steadying the womb by a volsella forceps, or, in thin subjects, by forcing the womb down upon the finger through supra-pubic pressure on its fundus. In this way I have, over and over again, at one sitting discovered a uterine growth, twisted it off, and removed it. Usually in these cases I experience more difficulty in removing the polypus or other growth through the small canal than in twisting it off from its uterine attachment. It often has to be wire-drawn before it can be removed, and sometimes the os uteri has needed a few nicks. Usually, when the menorrhagia is free, the cervical tissue is so loose that there is no difficulty in the introduction of the index-finger up to the fundus, but sometimes only its tip can be made to pass the os internum. Yet, even this limited degree of penetration is commonly quite enough to decide the presence of an inside growth. If it is not enough, I invariably search for a growth with a small pair of fenestrated forceps; and I have repeatedly seized and removed one the existence of which was merely suspected. After such operations the uterine cavity is thoroughly washed out with a solution of carbolic acid or of potassium permanganate.

I am sorry to say that I have not kept full records of all my cases of rapid dilatation. For instance, I have never recorded those office cases of dilatation in which ether was not given. Nor has any note been made of cases in which dilatation was performed under ether for curetting, for digital exploration of the endometrium, or for the removal of uterine growths. I have tabulated merely cases of dysmenorrhœa in single or in married women. In the married, with but three exceptions, which will be noted, painful menstruation was accompanied by sterility.

Including all the cases of dilatation performed under ether, I must have had over three hundred. I have limited myself to these cases because the use of an anæsthetic implies full dilatation—one in which serious injury, if ever, would most likely be sustained. Yet there has not been a death or a case even of severe inflammation in my practice, and the results have been most satisfactory—far more so than when the cutting operation was performed by me. The following are the statistics of my cases of dysmenorrhœa:

Unmarried.....	80
Married	88
	<hr/>
	168

Of the unmarried, eighteen were unheard from after the operation, leaving sixty-two from whom any data could be obtained. Of these, thirty-eight were cured, seventeen more or less improved, and seven not improved at all. Of these seven that

were not benefited by the operation, five subsequently had their ovaries removed—one of them by another physician and four by myself; of the latter, one died. In each one, the ovaries had become so altered by cystic or by interstitial degeneration as to make the dysmenorrhœa otherwise incurable. Of the seventeen improved, there was one on whom oöphorectomy was also performed; for, although the dysmenorrhœa was greatly relieved by dilatation, ovarian insanity and menorrhagia were not. The operation was a successful one, and my patient not only was cured of her hæmorrhages, but regained her reason. Out of these patients, the majority, although not wholly cured, were greatly improved. For example, one of them was formerly bed-ridden during the whole period of her menstrual flux, and had then to take large doses of morphia. She also suffered at those times from hæmatemesis and epistaxis. Since the operation she experiences pain for merely two hours, needs no anodyne, and has lost her ectopic hæmorrhages. Her gain in health and flesh has been great. Another one, who was wholly crippled by her sufferings and made nervous by the dread of them, is now a busy nurse. For one hour at every period she suffers a great deal, but she is too much afraid of taking ether to have a second dilatation performed.

Of those cured, two had Sims's operation performed previously without benefit, and were afterward dilated; two were dilated twice before a cure could be brought about. The history of several cases merits more than a mere allusion. The sufferings of one of my patients at every monthly period had always been great; but while she was at a boarding-school they grew so intense as to cause furious delirium at those times. This finally developed into permanent insanity with suicidal impulses. While in this condition she was placed in my hands. After rapid dilatation of the cervical canal, the dysmenorrhœa wholly disappeared. The exemption from pain toned down some of her more extravagant delusions, but she did not wholly regain her reason until a few months afterward. She is now free from all menstrual pain and in the complete possession of her mental faculties.

A Hebrew lady whose health had suffered from dreadful dysmenorrhœa was improved so much at one sitting that her physician and friends were amazed. Not long afterward he asked me to perform the same operation upon another one of his patients, who was, if anything, worse. Her sufferings were so intense that he wrote, "I fear that another period might kill her," and urged an immediate operation. The cervix in this case was conical and very dense. Fearing a tearing of the parts, I screwed the instrument slowly up to one inch and a quarter, and kept up this amount of dilatation for some twenty minutes. The cervix sustained no injury. The canal has since remained patulous, and she is free from all menstrual pain.

Of the married, fifty-three were heard from. Of these, thirty-nine were cured, ten improved, and four unimproved. Out of these fifty-three patients, nine were not in a condition to conceive—three of them from fibroid tumors, two from destructive applications of nitrate of silver to a lacerated cervix, three from being over forty-one years of age, and one from being a widow. This leaves but forty-four capable of conception, and of these, eight, or a little over 18 per cent., became pregnant. But the ratio is in fact larger, for several of my patients, fearing pregnancy, employed preventive measures after the operation. Then, again, I believe that others who consulted me merely for painful menstruation have not reported their subsequent pregnancies. For instance, two months ago I learned through the merest accident that the wife of a clergyman, whose cervical canal I dilated six years ago, has since been making up for lost time by giving birth to twins within a year after the operation, and then to several other children. She had been married eight

years before she came to me, and had had her cervical canal dilated by tents and slit up with Peaslee's metrotome by a skillful surgeon. I have also had several cases of pregnancy following office-dilatations of the uterine canal, in which ether was not given, and consequently the lumen of the canal was not much enlarged. But such slight operations were not deemed worthy of record, and they therefore have no statistical value.

Dr. HARRIS inquired about the danger of lighting up a former oophoritis by dilatation. The operation was successful, but that was its danger.

Dr. GOODELL had not hesitated to operate, but always used opium first, and by the time the operation was over the patient was under its influence. He kept them in bed and under the opium until all tenderness had passed entirely away.

A Dermoid Cyst of the Ovary was shown by Dr. GOODELL. A saleswoman, aged twenty-seven, was obliged to give up her situation because she found herself unable to stand for any length of time. Her physician discovered a pelvic tumor, and called in Dr. Goodell to see her. The diagnosis was obscure, but he leaned to a fibroid degeneration of the right ovary. The woman was otherwise well, suffering no pain whatever except when she was in the upright posture. The operation was performed on September 8th, and the tumor turned out to be a dermoid cyst. Being enveloped in the broad ligament, it was removed with difficulty. It was found stuffed with hair, and contained a plate of bone, the sharp edge of which had been readily felt *per vaginam*; but it threw no light on the diagnosis, as it was mistaken for a fibroid spur. His patient did uniformly well, and was now out of bed. He stated that in his experience these tumors were very vulnerable and often resisted even so slight an operation as aspiration, inflammation and suppuration quickly setting in. A physician had to-day brought to his office a young woman who had been tapped last June with a trocar. Long hairs and much sebaceous matter escaped through the opening, which had not yet healed up, and it was for this reason that he had been consulted. Upon passing in a uterine sound he struck a foreign body, which, from its density and the sharp click it gave, he was disposed to think was a tooth. He advised dilatation of the fistulous tract and the removal of the offending body.

Two Cases of Oophorectomy.—Dr. GOODELL also exhibited the ovaries which he had removed on September 17th and 29th from two patients, who also were doing well. He stated that the amount of tissue-change in these ovaries was very slight, and yet the suffering of each patient had been great. One had been an invalid for several years, and bedridden for the past six months. She had lost much flesh and was always groaning from left ovarian pain unless under the influence of large doses of morphia administered hypodermically. The left ovary was found to be undergoing cystic degeneration, but the right one was so sound that in its removal he was glad to have the backing of Professor W. S. Playfair, of London, who was present at the operation, for he believed that in most cases needing oophorectomy the results usually showed failures unless both ovaries were removed and the menopause was established. Convalescence after the operation had been retarded by great and painful swelling of both parotid glands, which developed without any marked rise in the temperature and without acceleration of pulse, and declined without suppuration—behaving exactly like mumps. This made his third case of parotitis following the removal of the ovaries. Not one had ended fatally, and, from the very slight febrile movement, he thought that the complication was not symptomatic—as in blood-poisoning—but sympathetic, and that a strong kinship, recognized by laymen, existed between the sexual organs and the cervical glands. Since the operation all pelvic pain had ceased.

The other patient was a poor woman, aged thirty, the mother of seven children. She was sent to him by Dr. George S. Hull, of Chambersburg, Pa. Three years ago she began to suffer from double oöphoralgia. The pain never left her wholly, but it began to increase in severity a week before the period culminated during the flux, and faded off afterward. Large doses of anodynes were needed in this case also, and she was unable to work. The case was clearly one of ovarian dysmenorrhœa, and he believed she would be permanently cured.

Dr. CHARLES H. THOMAS asked Dr. Goodell his experience of the result of oöphorectomy. What proportion of patients were relieved?

Dr. GOODELL could not reply definitely. He intended to report his cases before this society at some future time. In the majority of cases menstruation ceased, and, that element of trouble being removed, the patient was to that extent always improved. The neurasthenia resulting from previous suffering might remain, but it was far more amenable to treatment after the cause had been taken away. One such case had occurred to him recently. Dysmenorrhœa caused a virtual insanity, with a mind constantly wandering. The removal of the ovaries at once cured the dysmenorrhœa. The patient was now able again to walk, and the mind was improving. The operation removed the major element.

Dr. THOMAS had now in his care a case which he thought typical. The patient was a literary woman, overworked and crushed by family anxieties and depressing emotions. He prescribed rest and feeding. Massage proved of but little use, and electricity yielded negative results. Forced feeding became impossible. During menstruation she suffered for two or three hours with moderate dysmenorrhœa. Signs of oöphoritis developed, with swelling and hardening in the right iliac region. The patient was etherized, and a careful examination resulted in finding nothing materially wrong. As soon as anæsthesia was complete all the induration and tumefaction disappeared. There was an ulcer of the rectum, with moderate anteflexion of the uterus. The ulcer had since been cured, but there was no sensible relief. She suffered from a violent pain in the right ovary, extending to the coccyx and across the abdomen; it was cutting in its character at all times, and terribly severe. Formerly it ceased at night, but did not now. Hypodermic injections of morphia night and morning were necessary. Riding increased the pain, which often extended down the right leg. She could not sit up long without increasing the pain, which was evidently getting worse day by day. She had been totally disabled for nearly ten months. Was this pain hysterical? Could it be relieved by oöphorectomy?

Dr. GOODELL remarked that the question of oöphorectomy was, in any case, one requiring serious consideration. In the cases just related by him the patients had neither the means nor the time for prolonged treatment. Whenever possible, everything should be tried before resorting to an operation. One bedridden patient under his care, very analogous to Dr. Thomas's, had been relieved by the long-continued use of the constant current passed through the affected ovary. A feeble current was kept up for many hours, sometimes for a whole night at a time. The patient ultimately got well, bore several children afterward, and was now earning her living by teaching.

Observations from the Study of 142 Cases of Hysterotrachelorrhaphy.—Dr. CHARLES MILES WILSON read the following paper:

Though much has been written on this subject in the past few years, I trust a description of special instruments and a summary of the histories of 142 cases will not be amiss. In view of the exhaustive treatment the subject has received at the

hands of many observers, I hesitate to report my own limited experience. One hundred and four of these cases occurred in the practice of Dr. E. Wilson, two in my own, and the balance I witnessed as assistant, either in hospital or private practice. I regret that circumstances prevented me from obtaining a full history in all the cases. No one should hesitate to perform the operation or be unable to recognize the lesion. Yet very frequently gynecologists have sent to them, either for an opinion or operation, cases diagnosed as eroding ulcers, fungoid vegetations, cancer, etc., which, when the patient is properly examined, prove to be cases of laceration. The touch alone is sufficient to establish the existence of the lesion. If corroborative evidence is required, the patient should be placed in the knee-chest position, and the uterus exposed with a Sims speculum. For in this position, if each everted lip is grasped with a tenaculum, by gentle manipulation the natural contour of the cervix can be restored. If this simple feat can be accomplished, the diagnosis is at once established. For, in malignant disease, ulcerations of the os, etc., this can not be done. Reeves Jackson considers this test infallible. Formerly, many cases of laceration were comprehended under the generic term ulcer. But the description of the lesion and the operation by Dr. Emmet has settled for ever the well-worn controversy which so long divided medical opinion concerning the aetiology and pathology of the so-called ulceration of the cervix uteri. Oftentimes useless and injurious applications are made to the cervix, because the gentlemen having the medical care of the cases do not understand that the cervix is torn.

The old-fashioned tubular speculum is still too frequently used. It is now generally conceded that it is useless, except where *harsh* treatment is to be applied to the cervix without injury to the vagina. The tubular speculum separates the already everted lips and makes the laceration assume a more angry appearance. Thus faulty methods of examination often obscure the diagnosis. Another difficulty with many physicians is that the symptoms of which the patient complains are too apt to be regarded as the expression of some malady in which the uterus is not involved, unless, indeed, they complain of some vaginal discharge (a condition rarely absent). Again, the train of symptoms which belongs to laceration belongs equally to many other uterine ailments, and nothing but a carefully conducted examination can demonstrate that such is the case. The anæmias, debility, and other results of laceration, like the results of many other pathological conditions of the pelvic viscera, are often treated by a course of tonics, while the underlying cause of all the mischief goes on with its destructive work. When a woman consults a physician, complaining of any of the more marked symptoms, such as cranial, rectal, vesical, or pelvic pain, a feeling of weight about the uterus, disordered menstruation, and a leucorrhœal discharge, a vaginal examination should be considered an "imperative and essential prerequisite to treatment." The best of investigators is always at hand, namely, the index-finger, of which one of the masters of gynecological surgery says: "When properly educated and used to the full extent of its capacity, there is hardly any of the pathological conditions of the pelvic organs in woman which can escape its detective powers." Simpson in England, and Gardner in this country, first called attention to lacerations of the cervix. Emmet, as he himself says in his book, accidentally discovered the lesion in 1862, and devised the operation for its relief. To him belongs the credit of revolutionizing gynecological surgery.

Parturition is the chief cause of the lesion. The pressure of the child's head alone, especially if it is a large one, upon the os, may, even in a normal labor, be sufficient to lacerate it. If the os is rigid, or, as frequently happens, is both rigid and attenuated, the danger is of course increased. If the longitudinal

and oblique fibers of the uterus have greater contractile force than the circular fibers of the lower segment of the uterus have expansive power, the force of the contractions of the former exerted upon the foetal body, which rests upon and is engaged with the latter, may lacerate them owing to their non-expansion. In premature labor the circular fibers of the os, not being ready for the dilatation necessary to permit the egress of the contents of the uterus, may give way—i. e., there may be sufficient irritation of the uterus to expel its contents by contracting the fundus, but not enough to expand the os. Meddlesome midwifery is a prime cause. By this term I mean the practice of trying to force back from the presenting portion of the child the margin of the os, without waiting for it to dilate properly; the desire to expedite the labor in every possible way, the premature rupture of the membranes—the physician forgetting that nature's dilator, the "bag of waters," is the best of all. Experience teaches that all labors in which the membranes have been ruptured prematurely, either accidentally or purposely, are apt to be complicated by some laceration of the obstetric canal, especially of the cervix. Unnecessary and unscientific application of the forceps, and traction made with it without a proper knowledge of the pelvic canal and outlet, is another factor.

That the forceps is responsible for many cases of laceration there can be no doubt. When applied high up, or within the uterus, it is exceedingly apt to produce tearing of the cervix. Observations made by Dr. Mundé, at Mt. Sinai Hospital, New York, showed 119 cases of laceration in 750 women examined. Dr. Hanks, of the Demilt Dispensary, found only eight per cent. troubled with laceration. The Mt. Sinai is a Jewish institution, and most of its patients are Hebrews; these are generally attended by midwives. The Demilt is patronized by the poor of the city generally, and the patients are mostly attended by young graduates, who frequently use the forceps. So far as these observations go, they show that the forceps, even in inexperienced hands, does not do as much to produce laceration as the often untimely interference of ignorant midwives. Professor Gross, in one of the last papers he ever wrote, spoke of the frequency with which the forceps was applied, strongly condemning this practice and very justly attributing many of the cases of laceration of the cervix to it. He formulated his views in the words, "The principal causes of laceration are precipitate labor—labor attended with rigidity of the mouth of the womb, and *instrumental* labor." Dr. Fundenberg, in an article which appeared in the "Pittsburgh Medical Journal," makes use of this positive language: "I believe that the forceps, when properly applied, is a preventive of laceration of the cervix. . . . When carefully introduced, for instance, into a rigid os, dilated only sufficiently to receive a narrow blade, the waters being discharged, it preserves the cervix, by its inclined plane, from sudden impulse, and, simulating the bag of waters in its wedge-like and outward action, it dilates with great and continuous power, with any desirable amount of slowness, and with very great safety." In the 142 cases seen by the writer, the forceps had been used in 49—presumably, from the account of the patients, at the labor from which their distress dated. Did space permit, I should like to quote from other papers in reference to this question. Suffice it to say that the maladroit use of the forceps is responsible for many cases of laceration. The breech presentation is another factor, because of the necessity of rapidly delivering the head. The cervix may also be torn by the shoulders after the head has passed safely through. The injurious practice of giving large and frequent doses of ergot prior to the expulsion of the fetus is another cause. So, too, are abortions. The predisposing causes include the various forms of induration, whether caused by hyperplastic deposit or malignant

disease; all affections of the cervix producing tissue softening, such as epithelioma; or any condition interfering with the natural elasticity of the parts, as the cicatrices of previous surgical procedures, or, as happened in two of the cases the writer saw, of cauterizations; and any syphilitic or strumous taint, giving the uterus lack of tone. Dr. E. Wilson lays great stress on the "muscular depravity, the result of a constitutional syphilitic taint, and the consequent emaciated condition of os." This muscular degeneration may be the result of many pathological conditions—for example, anæmia, malnutrition, phthisis, and the like. Again, when the uterus is in a state of constant activity, owing to frequent gestation, it is liable to lose tone, and thus pave the way for the exciting cause to light up the trouble. Women are more apt to meet with this accident at the time of their first delivery than subsequently. It occurs also more frequently in rapid labors. Dr. Emmet believes that partial laceration takes place at the first delivery. Dr. Goodell, Dr. Pallen, and Dr. Mundé all record it as being exceedingly common. In two hundred women with uterine disease examined by the writer, nineteen had laceration of the cervix. The lacerations may extend through any portion of either lip. The writer has found the bilateral to be the most common—the rent being greater upon the left side—and laceration through the posterior lip the rarest form. The fact that a laceration has taken place is seldom noticed at the time of its occurrence.

When an examination is made at the completion of the delivery, the parts are so enlarged, soft, and yielding, and the os is so patulous that it is difficult to detect a laceration. But, if a tear has occurred, the woman soon begins to complain of symptoms which are well-nigh pathognomonic. Shortly after she rises from her bed and resumes her ordinary household duties she notices a more or less constant and generally increasing leucorrhœal discharge. This discharge is thick, viscid, and glairy, and sometimes tinged with blood. Sometimes, though rarely, this discharge is absent, or after a time disappears. Pain is a prominent symptom. It is generally of a dull and aching character. It is frequently referred to the lumbar region. Headache is a marked symptom. There is a peculiar sense of weight about the uterus, which is increased, along with the pain, after exertion. This feeling is augmented when the woman assumes the erect posture. The menstrual flow is, as a rule, increased. It is profuse, longer in duration, and comes on after shorter intervals. There is generally a nasty, glairy, and sometimes semipurulent discharge during the catamenial intermission. My own observation has taught me that there is generally an increase in duration and amount. When the laceration is recent, the increase is so small that it is hardly noticed, but, as a rule, it increases steadily until it sometimes assumes the character of a sudden and violent uterine hæmorrhage. Patients generally suffer with a feeling of malaise. The general health soon becomes impaired. The digestive system is often the first to suffer. Sexual appetite is usually impaired, sometimes abolished, its gratification being always attended with great pain. Insomnia is often present, together with other symptoms of a nervous character. The writer has seen one case in which hysteropilepsy was a prominent symptom. The symptoms are usually commensurate with the extent of the eversion of the lining membrane of the cervical canal. This membrane, when thus exposed, loses its delicate epithelial coat, and it chafes against the posterior walls of the vagina. This irritates and inflames the raw surfaces. Hypostatic congestion and engorgement ensue. This prevents proper involution of the uterus, and the parts remain enlarged and soft. The heavy uterus, inadequately sustained by its supports, falls to the floor of the pelvis, dragging the upper portion of the vagina with it. This makes the cervix look elongated, when in reality it is shortened. Sometimes

cicatization takes place, and often this plug of cicatricial tissue gives rise to symptoms more distressing than when the parts remain ununited. The mental symptoms are sometimes very grave, amounting to such a degree of mental perturbation as to threaten the sanity of the patient. One of Dr. E. Wilson's patients was for some months in an insane asylum. After her cervix was restored, her symptoms gradually subsided, and eventually, in the space of six weeks, entirely disappeared. This woman was deprived of her liberty because her friends refused to have the operation done. Another woman in his practice, a subject of melancholia with uterine symptoms, came very near being spayed. After her cervix was repaired, her melancholia and other symptoms vanished entirely. A very curious case of persistent salivation, apparently due to laceration, at all events which was cured by restoring the cervix, is reported by Dr. Longyear, in Vol. xvi, No. 1, of the "American Journal of Obstetrics." Did space permit, I might cite other interesting cases.

If the foregoing views in reference to laceration are correct, the indications for treatment are certainly clear. Having decided to resort to surgical means for the relief of his patient, the surgeon must consider whether the patient is in a proper state of health to be operated on. The same conditions which militate against other surgical procedures are equally operative in cases of trachelorrhaphy. When the uterus is bound down by adhesion, or severe inflammation exists, it is dangerous to operate. One patient who came under my observation nearly perished from an attack of peritonitis, because forcible traction was made to draw down to the ostium vaginae a uterus which was fixed and immobile, owing to adhesions, the result of a former attack of peritonitis. For operating, the patient should be placed in the dorsal posture, with her buttocks well drawn down to the edge of the table, an assistant taking charge of each limb. The cervix is exposed with a Sims speculum, grasped with a volsella, and gently brought to the ostium vaginae. The needle is passed through the cervix in the median line, from above downward; it is then armed with a stout piece of silk cord and withdrawn. A blunt-pointed tenaculum is then passed up the cervical canal until it engages the cord, a loop of which is withdrawn. This loop is divided, and the two free ends are united, thus forming two loops, the one controlling the anterior, the other the posterior lip. The margins of the tear are now freshened, care being taken to extend the line of incision beyond the angle of the rent, and to cut out any cicatricial tissue that may be present.

The hæmorrhage, which is never profuse, and which, by depleting the vessels of the uterus, tends to ameliorate the inflammatory conditions often present, is easily controlled by the application of hot sponges. Any one who has seen many operations must have noticed the sudden blanching and softening of the cervix due to the bleeding attending the operation. The late Professor Gross thought that the benefit of the operation was largely due to this local depletion. I have seen the circumflex artery cut on several occasions, but it never required a ligature to control it. Care should be taken to make the posterior angle of the plug of tissue removed sufficiently acute to allow of the proper approximation of the lips without tension in the sutures. The lower lip should be denuded first; otherwise, the hæmorrhage will obscure the field. Sufficient mucous membrane should be preserved in the center to re-form the canal. This is not always possible, and, when it can not be done, a small piece of carbolized lint should be inserted to prevent union in the line of the canal. This should be removed at the end of twenty-four hours. Otherwise, the canal may be occluded. This accident happened in three of the cases of Dr. E. Wilson's series, and the occlusion was overcome with some dif-

ficulty. All clots having been removed, and exact hæmostasis having been maintained for some moments, the wound is closed by inserting the needle through both lips, arming it with a wire suture, withdrawing it, freeing the wire, and clamping it with a shot. The ends are then cut off close to the shot. The sutures should be removed by the tenth day. As they are difficult to get at, these scissors were devised for that purpose. The vagina should be syringed out twice daily with a solution of the mercuric bichloride, 1 to 2,000. A Sims speculum should be used to remove the stitches, as there is danger of tearing the freshly united surfaces apart with a bivalve. In three cases I have seen excessive bleeding, all occurring on the third day after the operation. This, however, did not seem to come from the wound, but was regarded as the result of a passive congestion of the endometrium. If the operation is successful, the relief afforded is speedy and sure, and, what is more, generally permanent. The operation is simple and free from danger. It often renders sterile women capable of child-bearing.

Dr. E. Wilson has attended in confinement ten women on whom he had previously performed the operation. In two there was a slight recurrence of the tears. In many cases where coitus was impossible, on account of the pain and hæmorrhage it produced, the difficulty has been entirely overcome. In one case only did the operator fail to get a satisfactory result. The cervix was badly torn. It was repaired. The woman was afterward found to have salpingitis. Though her health improved after the restoration of the cervix, she did not recover. In a future communication to the society I hope to show her Fallopian tubes. Allowed to run its course, the sequæ of laceration are endless—disturbances of the catamenia, dyspareunia, oöporitis, leucorrhæa, subinvolution, grave mental disturbances, and, above all, epithelioma. In conclusion, gentlemen, permit me to quote the words of a distinguished gynecologist: "These are no longer the chimeras and hobbies of the specialist, but grave and serious dangers." It is to be hoped that in time to come a more scientific and certain knowledge of the dangers and difficulties of parturition, and of the means for their avoidance, may enable physicians to avert the accident.

Dr. BARE inquired if the operations were done for the relief of sterility.

Dr. Wilson replied that they were for the relief of general symptoms. Ten of Dr. Ellwood Wilson's patients had since become pregnant.

Dr. GOODELL remarked that he had no trouble in removing the stitches. His method was to leave the two lateral upper stitches with long-shotted ends; by means of these each side of the cervix could be drawn into the field of his bivalve speculum and the stitches removed with ease.

Dr. MONTGOMERY bore testimony to the same, and to the advantage of the bivalve speculum over Sims's for that purpose. He had used the double thread through the cervix, and had described its uses before this society at the meeting of October 6, 1881, as published in full in the "Obstetric Gazette" for January, 1882. As regarded the quantity of tissue to be removed in closing a laceration, the operator must be governed by the character of the injury, and it might not be possible to have a satisfactory result where there was an intversion of the uterus, the flexion occurring in the lower part of the cervix, the anterior lip being elongated and hypertrophied, the posterior normal or even atrophied; for in such cases it was impossible to prevent the preponderance of tissue in the enlarged lip. He could readily understand that, such a uterus becoming gravid, in the subsequent labor the long anterior lip would form a segment over the child's head, which would almost certainly result in relaceration. In the case which Dr. Wilson cited of extensive laceration during labor, the proper treatment would have

been to perform a primary operation by the immediate introduction of sutures, rather than permit the patient to be subjected to the necessity of a secondary operation. It would be necessary to introduce the sutures much deeper, and then to make allowance for the subsequent involution. It was not infrequent that multiple lacerations resembled epitheliomatous disease, and were accompanied by an offensive discharge. He had given temporary relief in such a case by the use of chromic acid and tannin locally. The needle used in passing the suture should not be much larger than the wire that was to follow it.

Dr. Wilson questioned the propriety of primary operations on the cervix, and thought the weight of authority against it.

Dr. MONTGOMERY remarked that the first case, by Montrose Pallen, was a primary operation and was successful.

Dr. THOMAS remarked that at the meeting of this society, held October 6, 1881, he had reported a case of laceration of the cervix uteri simulating cauliflower excrescence, which he had treated eighteen years before. The patient was exsanguine from hæmorrhage, which had put her life in great danger. He used glycerole-of-tannin tampons, and at the end of two weeks she had improved immensely and the condition finally proved to be a deep laceration with ectropion. Before the treatment she had been seen by six experienced gynecologists, who declared the condition cancerous, and one of them refused to be convinced that it was not so, saying, within the last four years, that it had been cancer, it was cancer, and she would die of cancer. When the case was reported, another of the physicians who had originally seen the case inquired of Dr. Thomas if he "proposed to cure uterine cancer by means of glycerole-of-tannin tampons." The menopause had since been established, the uterus, examined within the past month, was found atrophied, and the former patient had been for nearly twenty years a hard-working monthly nurse.

Dr. GOODELL thought it pardonable to make the mistake. With all his experience, he had seen two cases in which he could not for some time make a certain diagnosis. There was no doubt about the existence of a laceration, but whether the angry-looking growths were merely cock's-comb granulations or epithelioma was not so easy to decide. They eventually proved to be benign.

Miscellany.

THERAPEUTICAL NOTES.

Salicylic Acid as a Prophylactic against Cholera.—In a letter published in the "Bulletin général de thérapeutique," Dr. Beaudon says that his experience with salicylic acid as a disinfectant has been so satisfactory as to lead him to suggest that the drug be generally used as a prophylactic in case a country is threatened with cholera. He proposes the following rules for its use: 1. Make a solution of ten grammes of the acid in two hundred grammes of alcohol; add a teaspoonful of this solution to a glass of water. 2. Bathe, wash the hands, and rinse out the mouth several times a day with this mixture. Let all flannel and woolen clothing be impregnated with it. These precautions apply particularly to physicians, who are exposed to the contagion. 3. Take a teaspoonful of this same solution with each meal. The objection may perhaps be raised, he says, that the microbe (if there is a microbe) will be taken in by the respiratory passages. He does not discuss this idea, but limits himself to the statement that, whatever may be the channel of introduction of the microbe, it will not find a very fertile field for development if the individual has used and still uses a substance which opposes the entrance and propagation of the poison.

The Influence of Iodoform upon Body Weight in Phthisis.—Dr. Ransome ("Canadian Practitioner") administered to twenty-one patients

a pill containing one grain and a half of iodoform and two grains of croton-chloral three times a day. Three patients improved under the treatment; in five the disease progressed, but there was an increase in weight. In only two cases was the good effect persistent. Of twelve other patients who were treated in like manner, two became quite fat; in six there was no change after eight months; and four wasted away in spite of the treatment.

The Influence of Diet on Headache.—Haig ("Practitioner") reports at length a peculiar case of migraine which had long resisted treatment, and was finally cured only by strict adherence to a vegetable diet. Meat seemed to act upon the patient as a veritable poison.

The Treatment of Cardiac Troubles by Milk Diet.—Schmaubert ("Centralblatt für die gesammte Therapie") says: In giving milk, begin with a small amount, and regulate it according to the quantity of urine passed in twenty-four hours. The amount of milk must not exceed that of the urine. Milk is given in four doses during the day. All other food is strictly excluded. As regards the action of a milk diet on heart lesions, it is easily proved that its influence upon the anatomical changes is very limited; real improvement can only be obtained in fatty degeneration of the heart and dilatation of its cavities, especially if the latter is acute in its nature. On valvular lesions it exercises no influence. Hence the action of milk diet is limited to functional disturbances, but in this sphere it is unusually valuable; the influence is of a sedative and regulatory character, and manifests itself in slowing of the rapid contractions, diminution of the increased irritability of the heart, reproduction of the normal rhythm, etc. The precise regulatory action of the milk diet in cardiac diseases is probably due to a diminution of irritative influences from the stomach and intestines, as well as to diminished vascular obstruction and increased secretion of urine. A direct influence upon the heart can not be proved.

The Antipyretic Action of the Alkaloids of Quebracho.—M. Eloy and M. Huchard ("Union médicale") state that, in a series of thirty-six experiments upon animals, conducted by them, it was proved that these alkaloids (especially the one known as aspidospermine) exercised a powerful antithermic action. They have also employed hypodermic injections of aspidospermine successfully in cases of typhoid fever where quinine seemed to exercise no effect upon the temperature.

Corrosive Sublimate as a Disinfectant in Midwifery.—Dr. W. J. Sinclair, in the first number of the new "Medical Chronicle," gives a general résumé of the German contributions on this subject during the past year. The substance of his remarks is, briefly, as follows: Corrosive sublimate has largely replaced carbolic acid in several of the German lying-in hospitals, but there seems to be considerable diversity of opinion as to the value of the former substance and the dangers incurred by its free use. Stadfeldt, of Copenhagen, reports a death, with all the symptoms of mercurial poisoning, after a single intra-uterine injection of a solution of the sublimate, 1 to 1,500. Tænzler, of Breslau, states that he has used this solution freely in 624 cases, in four of which he observed symptoms of poisoning. He does not deny that there is danger in intra-uterine irrigation with corrosive sublimate, but suggests a means of avoiding it by firmly compressing the uterus after each injection, so that these shall be no longer laid in the cavity.

The Treatment of Puerperal Fever with Cold Baths.—M. Chobert, an abstract of whose inaugural thesis is given in "Lyon médical," draws the following conclusions from a number of observations made by him at the Lyons *Maternité*: 1. Cold baths can be safely administered in the puerperal state. 2. They are indicated in all cases of puerperal trouble attended with high temperature, with the exception of acute peritonitis. 3. We should begin with a bath of 28° C., and gradually lower the temperature until 18° C. is reached. 4. The baths are to be repeated every three hours until the temperature of the patient has fallen to 38° C., and remains there with slight evening oscillations. With the baths, large doses of alcohol are to be administered. The diet should be principally of a liquid nature.

Arsenic in Tuberculous Disease of the Joints.—Professor von Langenbeck ("Centralblatt für die gesammte Therapie") writes on the use of arsenic in cases of old tuberculous disease of the joints, where the patient has become greatly exhausted by long suppuration. He employs Fowler's solution, together with cod-liver oil, and speaks highly of this combination.

The late Dr. William Fruitnigh.—The following resolutions were passed by the Northwestern Medical and Surgical Society of New York, at a meeting held October 17, 1884:

Whereas, We, the members of the Northwestern Medical and Surgical Society, have been officially informed of the death of our friend and associate, William Fruitnigh, M. D., which occurred suddenly on July 20, 1884; therefore

Resolved, That we, as individuals and as a society, have lost a true and faithful friend. Our profession has lost from its ranks a member of great promise. Society has lost a useful and conscientious citizen; and it is with deep regret we mourn the loss of our esteemed brother. There is no time so mournful, none so solemn, as an occasion like this. Our beloved associate has been taken from us in the prime of early manhood, at an age when life and hope were most endearing. We mourn to be so suddenly deprived of our friend and brother, whom we had learned to prize and love. He was so manly and true, so sincere and kind, so noble, and withal so competent in the field of his chosen profession. But the laws of Nature are inexorable; death is as natural as birth. Nobly he performed life's mission and has gone to fathom the mysteries of eternity.

Resolved, That we extend our warmest sympathy and condolence to his bereaved parents and sister, and especially to his brother, our honored Secretary, J. Henry Fruitnigh, M. D.

Resolved, That these resolutions be entered upon our book of records, and a page be appropriately inscribed and dedicated to his memory.

Resolved, That the foregoing be furnished to the medical press for publication, and that an authenticated copy thereof, properly engrossed, be forwarded to the family of deceased.

WILLIAM M. McLAURY, M. D.,
C. A. LEALE, M. D.,
C. S. WOOD, M. D.,
} Committee.

Stigmata Maidis.—"Among the new remedies with which the materia medica has of late years been enriched," says the "Therapeutic Gazette," "there are few which have sprung into greater prominence, and which manifest evidence of a more tenacious hold on the regard of the medical practitioners, than the stigmata of maize—the 'silk' which embellishes the stalk of our common corn. It may seem somewhat incongruous to call an article with which the people of this country have been so long familiar a 'new' remedy. The adjective, however, as in the case of many other new remedies, so called, has reference rather to the discovery of some therapeutic property than to the drug proper. Corn-silk is, therefore, a new remedy from the fact of the comparatively recent discovery of its properties as an emollient, antiseptic, and diuretic. Under its lenitive action the inflamed surface of the genito-urinary tract, and more particularly, perhaps, of the bladder, as in vesical catarrh, is soothed, and the decomposition of urea into the irritant ammonium salts is checked. The flow of the urine is at the same time augmented, and thus we have a combination of the very effects which an intelligent comprehension of a case of vesical irritation would seem to dictate on the part of the therapist."

"The demand for corn-silk has been rapidly growing since attention was first called to it by Dr. Dassau and Dr. Dufau, of Paris, and Professor Castan, of Montpellier. The fluid extract must be made from the recent drug, and hence can be prepared only during a few months in the year. The demand, however, for this fluid extract has been in excess of the possible supply during the past year, leading to the substitution, by unscrupulous manufacturers, of a worthless article for the freshly gathered corn-silk, much to the detriment of the reputation of this drug. Messrs. Parke, Davis & Co., who were the first to place a preparation of stigmata maidis before the profession of this country, with the return of the season have laid in a large supply of the drug in anticipation of a continuance of its popularity. Competent employees of this enterprising house have for some time been at work in the corn-fields of the West, laying in a stock of the green drug, and suitably preparing it for preservation until it is made up into the form of a fluid extract. In view of the facts above stated, it is important that those who may have occasion to employ corn-silk may know whence they may obtain a reliable preparation."

Original Communications.

AN INQUIRY INTO THE ORIGIN OF THE USE OF THE LIGATURE IN THE TREATMENT OF ANEURYSM.*

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AMONG the many great advantages modern methods of treating wounds have conferred upon the art of surgery, one of the greatest is the security they have given to operations upon the arteries. They have made it possible to tie the principal arteries of the limbs in continuity with almost absolute security against secondary hæmorrhage, and with greatly diminished risk of causing gangrene. They have almost entirely done away with, or have relegated to the class of exceptions, that host of alternative methods by which for a century surgeons have sought to replace the ligature in the treatment of external aneurysms. It has become so safe to tie the femoral artery, for example, that the surgeon who, in an ordinary case of popliteal aneurysm, should resort to that operation in preference to any other method, would not be deemed indifferent to his patient's best interests, or thought to have exposed him to any serious risk which might have been safely avoided. The efficiency, promptness, and painlessness of the method would be accepted as a complete equivalent for the advantages peculiar to such rival methods as digital pressure or the use of the elastic bandage.

Such being the case, the question of priority in the introduction of the ligature gains in interest, and it is to that question that I ask your attention—a question that has been made to turn, not upon the simple fact of priority in the use of the ligature (concerning which there is no obscurity), but rather upon the motives, principles, and knowledge that guided those who first used it and who established the method. The facts are as follows:

On the 30th of January, 1710, Dominique Anel, a French surgeon practicing in Rome, operated upon a priest for a very large aneurysm of the brachial artery at the bend of the elbow, caused by an unskillful venesection; he exposed the artery above the tumor, and tied it as close to the latter as was possible; the patient made a good recovery.

The report of the case provoked much discussion, and a spirit hostile to Anel and to the new method showed itself in the country of his adoption, and it was charged against him, with a variety that testifies to the ingenuity of his detractors, that the case was not an aneurysm, that he had not cured it, and that the cure was only by a lucky chance. Against the first two charges he brought the written testimony of other surgeons who had seen the case; and against the third he offered arguments which show his correct apprehension of the manner in which the operation effects a cure. He says: "I did not touch the sac at all,

not doubting that the blood would leave it, since the way was open for it to pass down the limb, and that the sac, once emptied, would not refill; that the tissues of the membranes which formed it would not fail to shrink, and that thus the tumor would disappear; which did not fail to take place as I had expected."*

The case, together with his reply to various criticisms, was published by Anel in 1714, and the account was republished in various journals and books in 1716, 1739, 1749, and 1750; and the operation appears to have been repeated three times upon the brachial artery and once upon the temporal; in one of them the artery was tied "on the inner side of the arm above the condyle"; in all the aneurysm was traumatic.

The question at once arises: Why was not this method at once accepted by the profession and generalized? The answer is to be found, I think, in the attitude of the profession toward aneurysms in general, and in the ignorance of the existence of the collateral circulation. At the time Anel operated, surgeons attempted the cure only of traumatic aneurysms of the brachial and temporal arteries following venesection; against popliteal and femoral aneurysms they knew of no resource except amputation of the limb, and they had yet to learn even that the femoral artery could be tied without causing gangrene of the limb. One man (Morel, 1687) had applied the old method to a carotid aneurysm, but his patient died on the table, and the case served as a warning, not as an encouragement. The old method of laying open the sac and tying all bleeding points could be practiced without much difficulty and very successfully upon these minor aneurysms, and, although Anel's method recommended itself as easier of execution, it was, on the other hand, less certain to cure, because many of these aneurysms were arterio-venous aneurysms, and persisted or recurred after ligature of the artery. In two of the four cases above mentioned the disease returned, probably for this reason. In short, as regards some of the cases with which the surgeons of that time had most frequently to deal—arterio-venous aneurysms at the elbow—they possessed and successfully practiced the operation which to-day is still used in similar cases; and as regards the others, traumatic aneurysms of the brachial and temporal arteries, the same method was efficient; and, although the offered substitute was simpler, this advantage was offset by its failure when the aneurysm was arterio-venous; and they did not recognize the cause of the failure, for they had not learned to discriminate between this variety (first described by William Hunter in 1757) and the ordinary aneurysm. They labored under no embarrassment, no great difficulty from which

* "Car au lieu que l'on a accoutumé de faire la ligature en haut et en bas de l'anevrisme, je ne la fis, dit il, que du côté du haut: d'ailleurs, on ouvre le sac aneurismal, et je ne l'ai point touché du tout, ne doutant pas que le sang contenu dans ce sac ne se dissipât, ayant la liberté de se porter du côté de l'extrémité, et que ce sac étant une fois vuide, ne se rempliroit plus de nouveau, que les tuniques des membranes qui le formoient, ne manqueroient pas de s'affaisser, et qu'ainsi la tumeur devoit disparaître, ce qui n'a pas manqué d'arriver de même que je l'avois pensé."—Trévoux, January, 1716, p. 163; reprinted in "Bibliothèque choisie de méd.," 1749, vol. ii, p. 472, art. "Anévrisme."

* Read before the New York Surgical Society, October 14, 1884.

his operation could relieve them; it even exposed them to a variety of failure which they had not before known—the persistence or recurrence of the disease—and their knowledge of the resources of nature was not sufficient to enable them to extend their field of operation. What wonder that the new system was neglected and forgotten!

During the following half-century surgeons learned that it was not necessary to amputate the leg of a patient because the femoral artery was wounded; ligature of the wounded artery had been successfully practiced as early as 1646, and again in 1688, but it was not formally proposed as a substitute for amputation until nearly a century later. And, at about the same time, the "old operation" was first employed in a case of popliteal aneurysm successfully (Keyser, 1744), and, twenty years later, again successfully for femoral aneurysm (Burchell, 1765).

The attention of surgeons was now fully directed to the treatment of spontaneous aneurysms of the lower extremity, to the search for a proper substitute for the amputation which before had been the only resource. The first substitute was to extend to them the old operation, to repeat in a somewhat modified form what had been done by Antyllus more than fifteen hundred years before. Papers were written to prove that the obliteration of the artery would not cause the limb to fall into gangrene, and experience by actual operation rapidly accumulated.

The results of that experience were far from satisfactory. Pott ("Surgical Works," edited by Earle, vol. iii, p. 220) says of this operation: "I have tried it myself more than once or twice—I have seen it tried by others; but the event has always been fatal. . . . Nor have I ever seen any other operation than that of amputation which has preserved the life of the patient"; and, as Mr. Holmes points out, the immediate success of the treatment of popliteal aneurysm by proximal ligature (the "Hunterian" method), which itself has a mortality equal to that of amputation of the thigh, shows that the mortality after the old operation must have been something frightful. Something better needed to be found, and the times were growing ripe. Men were beginning again to think; the long blank period of tradition and dogmatism was coming to an end, and men stood at the threshold of the new era in which, under the influence of the intellectual upheaval of the French Revolution and the leadership of the French physicians, medicine was to become a science based on objective knowledge.

It had been learned that a popliteal or a femoral aneurysm could be cured by opening the sac and tying the artery above and below, but that the operation carried with it an enormous risk of death by secondary hemorrhage and the accidents arising from a large, irregular, suppurating wound. And, in describing the operation as incision of the sac and ligature of the vessel, it must be remembered that this order was frequently reversed and the artery tied before the sac was opened; the object was a double one: to close the vessel and to empty the sac, and the order in which these objects were attained was immaterial.

Desault's first operation of ligature on the proximal side was done June 22, 1785, and Hunter's December 12th of

the same year; but nine years before this, 1776, Desault* had had an opportunity to dissect a specimen of popliteal aneurysm that had undergone spontaneous cure, and he had found the popliteal artery plugged by clotted blood, the femoral obliterated "as far up as the origin of the muscular branches," and likewise the upper third of the tibial arteries. An Italian surgeon, Assalini, who spent a year in Paris, and a few months subsequently in London, and had the good fortune to see both Desault's and Hunter's operations in 1785, published a book† in 1787 in which he reports Desault's teaching in 1785; referring to this dissection of 1776, he says he [Desault] thought the obliteration of the upper and lower portions of the artery was the result of the stagnation of the blood in them, produced by plugging of the aneurysm, and that for this reason, in the treatment of true aneurysms of large vessels, he did not apply two ligatures and did not open the sac; he placed a single ligature above the aneurysm if that was possible, or below it if the condition of the parts made that necessary. By this simple ligature he prevented the blood from entering the sac and circulating in the dilated vessels.

This report is the substance of a clinical lecture given by Desault at the time of his first operation. It shows his conception of the method of spontaneous cure and of the means by which that method could be imitated; he sought to obtain coagulation of the blood through arrest of the current by placing an obstacle on either the proximal or distal side, and he knew—he had known for nine years—that it was not necessary to turn out the clots, that the incision of the sac could be dispensed with if the artery could be otherwise closed. But how was that to be done? Naturally enough, he first tried compression, and, that failing, then the ligature in continuity. Broca tells us that the first case of which we have knowledge that came under Desault's care was an axillary aneurysm, shortly before February, 1785, and he attempted to treat it by compression of the subclavian artery. Ligature of the subclavian was at that time an unknown operation. For some reason the patient left Desault and put himself under the care of another surgeon, who mistook the tumor for an abscess and opened it.

The idea of compression of the artery above the tumor was not new or unknown. In 1761 Kretschmer treated a traumatic aneurysm, resulting from a gunshot wound of the brachial artery, by direct pressure upon the tumor and by a tourniquet on the lower portion of the axillary artery; the latter was kept in place for three months, and the patient was completely cured. In 1765 Guattani treated a popliteal aneurysm by a bandage applied directly to the leg and tumor, and to the thigh over a long, narrow pad, placed along the course of the femoral artery, with the expressed intention of preventing, wholly or in part, the flow of blood to the tumor. And again, in September, 1785, at a consultation, held in London, on a case of femoral aneurysm as large as a middle-sized China-orange, at which eight surgeons (of whom Hunter was one) were present, all "were convinced of the impracticability of affording the patient

* Broca, "Des anévrysmes," p. 449, from "Journal de méd." (Vandermonde), vol. lxx, p. 473.

† "Essai médical sur les vaisseaux lymphatiques," Turin, 1787.

any assistance by the operation usual for aneurysms," and advised that the artery should be compressed at the groin; the attempt was made, but soon abandoned, because of the pain.*

We are now able to understand the position of the profession at the time; we know the extent of their knowledge, and with what problems they were dealing; we can put ourselves in Desault's place, interpret his act, and comprehend his motives. Let us see if that act was, as the partisans of Hunter claim, merely a lucky blunder, conceived in ignorance and passed without appreciation.

Desault knew an aneurysm could be cured without an incision to turn out the clot; he knew, as did most other surgeons, that the femoral artery could be tied without causing gangrene. He knew also that the principal cause of death after the common operation was secondary hæmorrhage, and the avoidance of this danger was his principal preoccupation, as it was also that of Hunter. We have seen that, far from trying to get rid of the clot, he sought to cause clotting, and at the same time avoid hæmorrhage, by compressing the artery on the proximal side. The attempt failed, presumably because of pain, and, when the next case came under his care, he substituted the ligature for compression.

The operation was done June 22, 1785, at the Hôtel Dieu in Paris. The patient was thirty years old; the aneurysm, of the popliteal artery, was as large as a turkey's egg. By an incision two inches long, Desault exposed the artery "immediately below the ring of the third adductor," separated it from the nerve, and tied it; he placed also a *ligature d'attente* above it, and tied this on the sixth day. The tumor promptly diminished to half its size, and the œdema of the leg disappeared. On the eighteenth day the ligature came away, and on the following day a large quantity of pus and blood escaped through the wound, apparently in consequence of rupture of the sac, and the wound then healed.

Desault operated upon only one additional case; this was shortly after Hunter's first case, and Desault, following Hunter's example, which was known to him, placed the ligature on the femoral artery, but at a still higher point. The patient died.

There remains now to be considered only the part taken by Hunter in the introduction of the ligature. We have already seen that in September, 1785, three months after Desault's operation, he had nothing to suggest in the treatment of a femoral aneurysm as large as a medium-sized orange, except compression of the artery in the groin, and that this was unsuccessfully tried. Three months later, December 12, 1785, he tied the femoral artery for a popliteal aneurysm.

The case was reported by Everard Home, in the "London Medical Journal," 1786, p. 394, and again, with four similar operations done by Hunter and three by others, in "The Transactions of a Society for the Improvement of Medical and Surgical Knowledge," London, 1793, p. 138. The date of the reading of the latter paper is not given, but that

of the one that precedes it is September, 1789, and that of the one that follows it is September, 1790. The second account is almost a literal transcript of the first. I quote from the second:

The patient was a coachman, forty-five years old, and the aneurysm "was so large as to distend the two hamstrings laterally and make a very considerable rising between them. . . . The operation was begun by making an incision on the anterior and inner part of the thigh rather below its middle, which incision was continued obliquely across the inner edge of the sartorius muscle, and made large, to give room for the better performing of whatever might be thought necessary in the course of the operation. The fascia which covers the artery was then laid bare about three inches in length, after which the artery was plainly felt. A slight incision, about an inch long, was then made through this fascia, along the side of the vessel, and the fascia dissected off; by this means the artery was exposed." A double ligature was passed around the artery [and vein] and "cut so as to form two separate ligatures. The artery was now tied by both these ligatures, but so slightly as only to compress the sides together. A similar application of ligature was made a little lower. The reason for having four ligatures was to compress such a length of artery as might make up for the want of tightness, it being wished to avoid great pressure on the vessel at any one part." [A fuller explanation of this practice is given in an earlier sentence (p. 145) as follows: "The cause of failure arises from tying a diseased artery, which is incapable of union, in the time necessary for the separating of the ligature." Apparently, Hunter thought that by tying the artery loosely more time would be given for the artery to become sealed before the ligature cut through. Certainly his intention was not simply to diminish the stream, for the ligatures cut through, and in his subsequent operations he used a single ligature and tied it tightly.] Secondary hæmorrhage occurred on the ninth day, but was controlled by a tourniquet; "on the fifteenth day some of the ligatures came away, followed by a small discharge of matter, the tumor in the ham being lessened." In April, and again in July, more of the ligatures came away, and on July 8, 1786, he was discharged cured. April 1, 1787, fifteen months after the operation, he died of remittent fever. His following four operations were similarly performed, except that in the fourth and fifth the artery alone, and not the vein, was tied. The second died of secondary hæmorrhage on the twenty-sixth day.

This is followed by the account of three operations performed after the same method by other surgeons, of one of which, by Pott, he says: "*This mode of operating*"* was adopted by Pott in a case of popliteal aneurysm," and he goes on to describe how the artery, probably the popliteal, was exposed by "an incision five inches in length, upon the posterior part of the thigh . . . between the two hamstrings"; and he adds (p. 173): "The mode of taking up the artery in the ham must be always unfavorable to the future success of the operation, if either the artery itself should be diseased, or if the tumor, by being so contiguous to the violence done in the operation, should be affected by

* "London Medical Journal," 1788, p. 149. "Cases of the Spontaneous Cure of Aneurysm," by Mr. Edward Ford.

* Italics mine.

the consequent inflammation, which seems to have been the case in Mr. Pott's operation, as I understand two abscesses were found close to the sides of the sac." Here is the same operation as that done by Desault (ligature of the popliteal artery) and quoted by Home, in the first authorized account of Hunter's method, as an example of Hunter's method, and this in itself would be sufficient, even if it were not corroborated again and again in the article, to show that Hunter's only idea was to tie the artery without opening the sac, and the reason he gives for tying it at a somewhat higher point (two inches at the most) than Desault and Pott did is ("London Medical Journal," and repeated by Home, *loc. cit.*, p. 146) that, "if the artery should afterward [after ligature of the popliteal] give way, there will not be a sufficient length of vessel remaining to allow of its being again secured in the ham. To follow the artery up through the insertion of the triceps muscle, to get at a portion of it where it is found [? sound], becomes a very disagreeable part of the operation; and to make an incision upon the fore part of the thigh, to get at and secure the femoral artery, would be breaking new ground—a thing to be avoided, if possible, in all operations." In one of the remaining two cases, a femoral aneurysm, extending to within two inches of Poupart's ligament, Mr. Cline tied the artery *half an inch below* the origin of the profunda, and, as the dissection showed, two inches above the orifice of the sac. This also is given in illustration of the method, and yet there could have been no collateral branches between the ligature and the sac; certainly none are mentioned.

In short, his one idea was to avoid secondary hæmorrhage by tying the artery at such a distance from the aneurysm that it would probably be found healthy, and to make the application of a second ligature easy if such hæmorrhage should occur. Of the "excogitation of a principle by profound reasoning," of which Mr. Holmes speaks, there is not a trace in this account; of the second "great merit" attributed to him by the same able writer, "that it was not necessary to stop the circulation through it [the sac] absolutely, but only," as he said, "to take off the force of the circulation," there is no justification except this quoted phrase, which, in view of the fact that the ligatures divided the artery completely, although, perhaps, more slowly than if they were tied tightly, certainly can not have the meaning attributed to it of only diminishing the stream of blood, and which, even if it did, was abandoned after the first operation, when he substituted a single ligature tied tightly for four ligatures tied loosely.

Moreover, the idea of curing an aneurysm by simply diminishing the flow of blood through it was by no means new; it underlay all the preceding attempts to cure by compression, and was plainly included in Desault's lecture reported by Assalini and quoted above. It was not until after the ligature in continuity had shown that the danger of secondary hæmorrhage was still present that very forcible compression, to effect complete and permanent closure of the artery, was tried as a substitute for the ligature.

The three grand merits claimed for Hunter (Holmes's "System of Surgery," art. "Aneurysm") are that he had

seen: 1. That it was not necessary to turn out the clots; 2. That it was not necessary to stop the circulation through the sac absolutely, and that, therefore, the artery might be tied at some distance above it; and, 3. That the ligature of the main artery would not involve gangrene of the limb. Now, of these, the first was certainly known by Desault, through a post-mortem examination, and probably by most other surgeons, as is proved by their attempts to cure by compression. As regards the second, the fact contained in the first clause, that it was not necessary to stop the circulation completely, had been long known before his operation; and the inference stated in the second clause was not drawn by Hunter, and was not given as his reason or justification for placing the ligature at a higher point. Home's paper (which, it must be remembered, is an official one, and made in Hunter's name) does not contain a single reference to collateral branches given off between the ligature and the aneurysm.* The phrase "that simply taking off the force of the circulation is sufficient," which is also quoted as meaning that a diminished stream of blood was expected to be brought to the aneurysm by collaterals, is the only thing in the entire paper that can suggest such an idea; and that neither this meaning nor the one above referred to—of only partly compressing the artery—was intended to be conveyed by it, is shown not only by actual statement of the reasons and objects of the operation, but also by a case which he quotes (p. 156) in illustration of his argument—a case of spontaneous cure of an aneurysm by inflammation of the sac, accompanied by arrest of pulsation in the sac and in the artery immediately above it. If the phrase were written out in full to express the entire idea, it would read: "It is sufficient simply to take off the distending force of the arterial stream from the blood contained within the aneurysm; the blood will then coagulate in the sac and in the adjoining part of the artery, and the progress of the disease will be stopped; it is not necessary to open the sac."† The opening of the sac is what he was thinking of when he used the word "simply," not of the presence or absence of collateral branches, not of merely diminishing the stream.

* The only reference to collaterals in the first paper is one (p. 399) to the effect that "surgeons have laid too much stress on the necessity of large collateral branches being present to insure the success of this operation, . . . since we find that the trunk of the femoral artery may be taken up in any part of the thigh without producing mortification of the limb."

† Compare the corresponding paragraph in "London Medical Journal," letter of Home, November, 1876, p. 393.

"From these considerations [those quoted above about the desirability of not breaking new ground], suggested by the accident of the artery giving way, which happened several times to Mr. Hunter, he proposed, in performing this operation, that the artery should be taken up at some distance from the diseased part, so as to diminish the risk of hæmorrhage and admit of the artery being more readily secured, should any such accident happen. The force of the circulation being thus taken off from the aneurysmal sac, the cause of the disease would, in Mr. Hunter's opinion, be removed; and he thought it highly probable that, if the parts were left to themselves, the sac, with the coagulated blood contained in it, might be absorbed, and the whole of the tumor removed by the actions of the animal economy, which would consequently render any opening into the sac unnecessary." [Italics mine.]

The third great merit—that Hunter saw that the ligation of the main artery would not involve gangrene of the limb—had been known for a hundred years, and had been proved by every successful case in which the old operation had been used, and also by Desault's ligation in continuity six months before.

Both Desault and Hunter had the same object in view: to cure the aneurysm without opening the sac. Desault had a small aneurysm, and tied the popliteal at its upper end. Hunter had a large one, and tied the artery a little higher up (he could not well have done differently). Desault, in his second operation, went still higher, and tied a little below the apex of Scarpa's triangle; subsequent operators have habitually tied in the triangle itself. Even the observation claimed for Hunter—that the artery was diseased above the aneurysm, and that this was the cause of the secondary hæmorrhage—had been made before him, and was given by Pott as a reason for preferring amputation to the old operation (Pott, *loc. cit.*, p. 220).

I see nothing in Hunter's operation radically to differentiate it from Desault's and to justify the ascription of the method to the English surgeon. It seems to me to be beyond question that Desault had grasped the principle, and the difference of an inch, or two or three or six inches, in the distance, is a matter of detail which is to-day subordinated to the rule that the artery should be tied at the nearest accessible point that does not directly involve injury to the sac.*

Why Hunter's name should have become so pre-eminently identified with it is to be explained by reasons entirely independent of the principle involved, and of the measure in which that principle was grasped by the two great rivals. Hunter enjoyed a great authority and was widely known; his example was followed, his practice was quoted by those who wrote in our language. Desault lived and made his great discovery at a time when his nation was entering upon a revolution that shook the world and isolated France by war for nearly twenty-five years; he made it at a time when men were occupied with mighty interests beside which the advances of science seemed as nothing; at a time when, to Lavoisier pleading for another fortnight of life that he might complete certain experiments, the answer was: "The Republic has no need of such." What wonder that at such a time and amid such surroundings his discovery should have passed unheeded by those about him, and have remained unknown by those who were at war with his country? It is our privilege, our duty, to recognize his work and to give him the credit that is his due.

* It seems unnecessary, in view of these facts, to consider the question, whether or not Hunter knew of Desault's operation before performing his own. The facts bearing upon it are, that Assalini was at Desault's operation, afterward went to London, and was present at Hunter's operation, and that Hunter, three months before his operation, seems to have made no suggestion of this treatment in the case of femoral aneurysm, quoted above, which he saw in consultation, and which, after a futile attempt at cure by compression, was abandoned to its fate.

ANTISEPTICS IN MIDWIFERY.*

By CHARLES JEWETT, M. D., BROOKLYN,

PROFESSOR OF OBSTETRICS AND DISEASES OF CHILDREN IN THE LONG ISLAND COLLEGE HOSPITAL.

ANTISEPTIC measures for prophylaxis in childbed may be divided into two classes:

1. Those addressed to the surroundings of the patient.
2. Those applied directly to the parturient canal during labor and the puerperal period.

The former aim to protect the patient by an aseptic environment.

The latter assume to destroy or disarm septic matter that may have gained lodgment in the genital tract.

While the importance of the one class of procedures must be generally conceded, opinion and practice are by no means uniform in respect to the other.

Though for many years fully committed to their use, the recent experience of the writer has led him to abandon prophylactic injections as a routine practice in the puerperal period, and to place little dependence on them during labor. On the introduction of antiseptics into the Maternity service of the Long Island College Hospital, a marked improvement was at once apparent in the temperature charts. A normal thermometric line became the rule where it had formerly been the exception. Nearly sixty-three per cent. of the women confined in the year following the adoption of antiseptic precautions had normal temperatures during the post-partum week, while not more than sixteen per cent. had wholly escaped febrile temperatures before.

Early in 1883 I began a series of observations with a view to determine whether this improvement was due in any degree to the use of antiseptic injections during the puerperium. The result has already been in part reported.

Two parallel series of hospital cases were treated side by side, one with and the other without vaginal injections. Both series numbered twenty-nine patients—sixteen in the douched and thirteen in the non-douched class. The principal disinfectant was a 1-to-1,000 bichloride solution, a 3-to-5-per-cent. carbolic solution being used in a few cases only. The injections were administered by competent nurses, and it is fair to presume that they were managed with care and skill. They were repeated twice daily during the post-partum week. Of the sixteen douched cases, eleven had temperatures that did not exceed 99° 5' F. in the first puerperal week. Of the thirteen non-douched cases, the temperature record was constantly below 99° 5' F. in twelve. The morbidity was less in the patients left undisturbed by the douche. True, the departure from the normal was not necessarily always due to sepsis. Moreover, two operative cases were included in the douched series, while there were none in the other. While the result of these observations may not therefore be considered conclusive, especially in so small a number of cases, if it does not amount to an indictment of the puerperal douche, it certainly proves nothing in its favor.

The advantage obviously gained by the introduction of

* Read before the Medical Society of the County of Kings September 16, 1884.

antiseptics was clearly due to other measures than the douche. Routine injections of the genital tract during the puerperium were therefore abandoned as a useless if not injurious practice.

Local antiseptic measures for prophylaxis were subsequently confined mainly to the labor period. Vaginal disinfection was practiced at the beginning and close of labor, and, in case of prolonged or instrumental delivery, was once or twice repeated in the course of its progress. This method was believed to be in keeping with antiseptic principles as applied in surgical practice. The field of the obstetric wounds was cleansed before solutions of continuity occurred. After labor the wounds were treated with the disinfectant while still fresh, and were then left wholly at rest.

Further experience, however, has somewhat shaken my confidence in the value of even this practice. The reasons will best appear by relating the history of three cases of puerperal fever which befell the service during the last year.

I should state that the Maternity is located in the hospital building, from which, however, it is about to be removed. Yet the very disadvantage of the surroundings has afforded the better opportunity to test the value of local antiseptics.

In the latter part of December, 1883, erysipelas appeared in the general hospital service. A few days later a patient was attacked with childbed fever in the Maternity. The notes of this case are as follows:

J. S., aged twenty-three, married, primipara, in excellent health, was brought to the hospital in the ambulance, December 26th, after being fourteen hours in labor. First stage complete on admission. Four hours later—at 2 p. m.—was delivered of a female child, weighing eight and a half pounds. Labor strictly normal; sustained a slight laceration of the perineum. The vagina was thoroughly irrigated with the bichloride solution at the beginning and close of labor, and a forty-grain pessary of iodoform was placed against the cervix after each douche.

The perineal wound was dusted with iodoform on its occurrence, and was treated with immediate suture. Vagina and wound were thoroughly irrigated again with the bichloride solution immediately before and after the suturing. Ordered extract. ergot. fluid., ℥ xv, t. i. d. Douche to be continued twice daily. In less than twenty-four hours after delivery the patient complained of great hypogastric pain and tenderness, and the temperature rapidly rose to 103.75°. The subsequent course of this case was typical of an extremely painful diffuse peritonitis. Lochia at no time offensive. The vaginal injection was repeated every four hours from the invasion of the fever, without affecting the temperature. A single intra-uterine douche within twelve hours after the fever began was equally without effect, and was therefore not repeated. It may be of interest to note that the daily dose of opium reached a maximum of one hundred and eighty-eight grains. The patient died January 1, 1884. Autopsy revealed general peritonitis; no evidence of septic matter in the uterine cavity.

On the occurrence of infection the obstetric service was in part suspended. The fever patient was quarantined in a remote portion of the building. The Maternity was disinfected and placed in charge of an externe appointed temporarily for obstetric duty only, the resident staff withdrawing for the time from the lying-in service. Three

normal cases followed in course of the next six weeks. By mischance the next patient—confined February 7th—was attended by a member of the house staff. She developed childbed fever within forty-eight hours after labor. The following notes are taken from the hospital record of this case:

H. P., aged twenty-eight, single, primipara, of robust appearance, brought into the hospital, near the completion of the second stage of labor, February 7, 1884. Labor in all respects normal, lasting less than ten hours. No perineal wounds nor other notable injury to the passages. Child a female, weighing six pounds and a half. Bichloride vaginal douche, followed with iodoform pencil at the close of labor. Ordered a forty-grain pencil of iodoform placed against the cervix twice daily. On the evening of the 8th, during a temporary absence of her nurse, the patient left her bed and walked barefooted across the ward. Two hours later she was seized with a violent chill. Temperature rose rapidly, reaching 105.5° on the 9th. Lochia became extremely offensive.

The prominent feature of this case was high temperature, with slight oscillations ranging from 103.6° to 105.5°. Pain was almost wholly absent, and there was intolerance of opium, small doses at long intervals inducing deep somnolence. Vaginal injections of the sublimated solution were given every four hours, and, this failing to bring down the temperature, two intra-uterine injections of the same solution were administered, also without effect. The patient died on the 12th. On autopsy, the prominent lesion found was general peritonitis, with accumulation of pus in the pelvic cavity. Uterine cavity healthy, and involution nearly normal for the time.

This patient had been promptly isolated on the occurrence of fever, the wards and beds disinfected, and the department placed in the care of an entirely new corps of attendants. Seven confinements followed with substantially normal post-partum histories. A third case of metria then occurred in a patient delivered April 22d. The attending personnel in this instance were free from all suspicion of septic contamination.

The following extracts from the hospital notes present the salient facts of the case:

M. B., aged twenty-two, primipara, somewhat anæmic. Admitted April 10th. Delivered at 9 p. m., April 22d, of a female child, weighing six pounds and a half, after a natural labor of about eighteen hours' duration. This patient sustained a laceration of the perineum extending half way to the sphincter ani. At the beginning and close of labor the same methods of local disinfection were practiced in this as in the first case; no puerperal douche was used till the fever developed. The perineal wound was dusted with iodoform and sutured. Nothing abnormal occurred till the evening of the 24th, thirty-six hours after labor, when the temperature began to rise. A slight chill followed on the morning of the 25th, the thermometer then registering 104.5°. There were no subsequent rigors. The lochia were at no time offensive, nor was there any pelvic pain or tenderness during the history of the case, except in the perineal wound. The sutures were removed on the fifth day. The perineum was very tender on pressure; union imperfect; wound subsequently reopened throughout. On the 27th, patient had several stools, largely of a bloody, mucous character, attended with tormina and tenesmus. This dysenteric attack was once or twice repeated in the succeeding few days. Occasional though not troublesome vomiting from this date. On the 29th

and on the 30th of April the temperature fell to 100° F. May 1st it went rapidly up to 104.5°, and, on the 2d, the perineal wound, the vestibule, vagina, and vaginal portion of the cervix were found covered with a thick, fibrinous exudate. At this time a small, superficial phlegmon appeared on the extensor surface of each forearm, and there was more or less tenderness and stiffness of the knee- and wrist-joints. The mind remained clear till within two or three days of death, low, muttering delirium then supervening. A notable feature of this case, too, was intolerance of opium. A single dose of tr. opii dead., ℥ viii, on May 6th, induced marked somnolence. At about this time the patient showed signs of intoxication on increasing the dose of whisky from one to two drachms hourly. Died May 7th.

On the invasion of the fever the sublimated vaginal douche had been ordered every four hours, each douche to be followed with a forty-grain pessary of iodoform placed against the cervix. The vaginal douche failing to affect the temperature after a few hours, a single intra-uterine injection was given. As the result was wholly negative, the latter injection was not repeated. The vaginal disinfection was discontinued May 2d and 3d, and repeated at intervals of two hours thereafter.

In proof of the thoroughness with which the sublimated injections were used, I may state that, in addition to the usual local erythema, the patient, during the last few days of her life, developed symptoms of slight mercurial poisoning.

Referring to the admirable paper recently presented to the society by Dr. Thallon on the use of "Mercuric Bichloride in the Treatment of Diphtheria," it will be of interest to note before leaving this case that the vaginal exudate developed and grew space on a mucous membrane almost constantly bathed in a 1-to-1,000 bichloride solution.

The treatment other than antiseptic has been omitted, as it has no interest in connection with the present object.

As will be inferred from the history, the last case was one of pyæmia. On autopsy, minute abscesses were found in the kidneys and spleen, and large ulcerated patches on the mucous surface of the colon near its cæcal end. Peritoneum healthy. Uterine involution normal for the period. A fibroid of the size of a walnut was found in the anterior wall of the uterus nearly under the peritoneum, and behind the fibroid was a cavity containing ichorous, foul-smelling pus. Vaginal false membrane as above described.

To recapitulate the facts bearing on the present question, the sublimated vaginal injection was given in two of the cases at the beginning, and in all at the close of labor. After each injection from forty to eighty grains of iodoform were deposited in the vagina. The perineal wounds were sprinkled with iodoform, were a second time irrigated with the bichloride solution, and were closed with sublimated silk sutures. In a word, in each case the infection occurred despite a carefully ordered vaginal disinfection.

I have therefore been compelled, though reluctantly, to relax my faith in the protective power of local antiseptic measures in the parturient as well as the puerperal patient. They can not be relied on to procure immunity from infection in the presence of septic surroundings. They must not be trusted to remedy the sins or the accidents of uncleanness. An experience such as I have recited goes to emphasize the importance of an aseptic rather than antiseptic management of the patient. The avoidance of infection, as some writer has expressed it, is a better reliance than disinfection. And it is to aid in accomplishing this end, by

promoting a cleanly environment, that antiseptics are most valuable in obstetric prophylaxis.

With reference to the use of utero-vaginal injections as a therapeutic resource, the foregoing cases are also instructive. Much as I value the measure, and brilliant as its results often are, there is, I am persuaded, a class of cases which are not at any stage amenable to this method of treatment.

NORMAL PARTURITION ALWAYS PHYSIOLOGICAL.*

By ERNEST PALMER, M.D.,

BROOKLYN.

MR. PRESIDENT AND GENTLEMEN: Fully appreciating my inability to add anything new at this time to the practice of obstetrics, and with the knowledge that the profession at large have so recently been entertained with the advanced views upon midwifery practice, I have deemed it advisable to make a retrograde step, so to speak, and look a little into the physiology of normal parturition, convinced as I am in my own mind that in the hurry for improvement, so called, in this branch of practice, the truly physiological condition has for the time being been lost sight of and a pathological one substituted.

This, at least, is the interpretation I have arrived at after a somewhat careful study of the writings of the advanced school of obstetricians, and that we are no longer to look upon gestation as a purely physiological process, completed by gradual but well-defined stages of development and elaboration of normal tissues, but as a more or less pathological condition, due to the changes which take place in some of the fluids and solids of the pregnant woman, which nature finds it necessary to alter in quality and quantity to meet the requirements of the developing embryo.

I fail to see the slightest analogy between normal parturition and any condition to be met with in the whole range of medicine or surgery; for, while in normal pregnancy there is simply a reproduction of normal structures terminating in the production of a new being which is itself physiological, in medicine and surgery we are at once in the presence of every manner of deviation from the normal or physiological in the treatment of deformity, injury, or disease. Losing sight for the time being of these facts, I believe, led to the inauguration of the ante- and post-partum treatment of the lying-in woman with which all are now familiar, and which therefore need not be repeated here in detail; but, the groundwork of this treatment being the antiseptic vaginal douching and medication, it will aid me in illustrating the physiological points of my paper.

Leishman, in his "System of Midwifery," in describing the phenomena of labor, says: "From an early stage of labor the tissues are prepared for their new function by a profuse secretion from the vagina and cervix of a thick, colorless mucus, while the parts from which it flows become softer and more cushiony. This discharge, which is occasionally tinged with blood, is frequently mixed with little semi-solid albuminous masses, and is very obviously provided by nature

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for the purpose of lubricating the parts, and thus facilitating the progress of the fetus along the canal through which it has to pass. Upon the *quantity* of the secretion the ease of the labor undoubtedly depends *in no small degree*, not by its lubricating action alone, but because its appearance involves a softening and general preparedness of the tissues dependent upon the unloading of the congested vessels. There is *no sign* upon which, as indicating the probable duration of a case of labor, the accoucheur looks with more confidence than this; and, from a copious secretion and relaxed condition of the parts, he augurs an easy and speedy labor, while from a dry, constricted, and rigid vagina he learns that, in all probability, a lingering and exhausting labor will lead to a tardy delivery."

Here we have described at some length the physiological function of the cervical and vaginal secretions, and the very important part they perform during the act of parturition, as well as the value to be attached to the presence of a free secretion in the vagina, in aiding delivery, brought into strong contrast with what may be expected when there is a diminution in the amount, and yet, with a full knowledge of their importance, we are directed by the antiseptic midwife, by frequent syringing of the vagina during the first stage of labor, to wash away these secretions, upon the bare presumption that they may possibly prove a source of septic danger to the mother.

In other words, removing an important physiological factor from a normal delivery to prevent a possible pathological complication.

Labor being completed under the antiseptic method of prophylactic vaginal douching and medication with iodoform, it is at once resorted to, to combat the much-dreaded lochia being absorbed through the denuded uterine muscular tissue or slightly lacerated mucous membrane of the vagina.

Here, again, the stamp of pathology is placed upon a physiological retrograde metamorphosis inaugurated immediately after labor.

Professor Thomas, in his monograph upon the prevention and treatment of puerperal fever, says:

"The uterus, about the two hundred and eightieth day of gestation, contracts and expels the child, then the placenta and membranes, and then closes its empty cavity and rests.

"Let us suppose that in forty-eight hours after delivery a primipara dies of pneumonia, and we are allowed to lay open the genital tract and examine it from the fundus uteri downward.

"Outside all looks well; the uterus is merely much larger than in the non-pregnant state.

"Within, it presents a very different appearance; the whole endometrium, covered over by the grayish, sloughy-looking decidua vera, presents all over its surface an unhealthy, unclean, and diphtheritic look, although free from exudation. Here and there shreds of membrane consisting of small portions of the decidua reflexa, which has become adherent, appear, partially detached and somewhat decomposed.

"At one point the large placental site is seen, raw,

irregular, and covered over by minute traces of the placenta and small blood-clots which close the mouth of the uterine sinuses.

"The odor of the opened uterine cavity, the walls of which are thus covered, is disagreeable. The substances mentioned have for forty-eight hours been dislodging themselves, and, mingling with the pinkish fluid which pours like an unhealthy sweat from the placental site, constitute what is called the cleansing or lochial discharge."

Certainly Professor Thomas does not expect us to accept this examination of the uterus, vagina, and lochia of a woman dead from pneumonia, for what really exists in the parts after a purely normal delivery, but, bringing it forth as he does to elucidate one of his reasons for prophylactic treatment in all midwifery cases, I have concluded he infers that the same condition is present after a normal case. In the first place, we might reasonably object to the subject upon whom he made his observations. It is hardly possible that the uterus of a woman dying from pneumonia forty-eight hours after delivery would present the typical post-partum physiological appearances of the uterus; but I will show farther on that what he presents as pathological is simply natural and protective, not pathological or inclined to be destructive, as comparison with the following clearly shows. Professor Dalton, in his article on "Reproduction," Dalton's "Physiology," page 664, in describing the regeneration of the uterus after delivery, says: "A remarkable phenomenon connected with the renovation of the uterine tissue is the appearance in the uterus during pregnancy of a *new mucous membrane* underneath the old, and destined to take the place of the latter after its discharge. If the uterus be examined immediately after parturition, it will be seen that at the spot where the placenta was attached every trace of mucous membrane has disappeared.

"The muscular fibers in this situation are exposed, and the mouths of the ruptured uterine sinuses are also visible, their thin edges hanging into the cavity of the uterus, and their orifices plugged with bloody coagula. Over the rest of the uterine surface the decidua vera has also disappeared.

"Here, however, notwithstanding the loss of the original mucous membrane, the muscular fibers are covered with a semi-transparent film of a whitish color and soft consistence. This film is an imperfect *mucous membrane of new formation*, which begins to be produced underneath the decidua vera as early as the beginning of the eighth month.

"The mucous membrane of the cervix, which takes no part in the formation of the decidua vera, is not thrown off in parturition."

The lochial discharge receives but meager description at the hands of physiologists, they by courtesy delegating to obstetrical authors the right to more fully present the subject in its direct relation to midwifery practice, and to Leishman we are indebted for the most complete and yet concise description of its origin, course, composition, and physiological function.

Leishman says: "In order to understand the true nature of the lochial discharge it is necessary to consider for a moment the anatomical condition of the parts from which it springs.

"That part of the uterus from which the placenta has been separated was compared by Harvey to the stump of a limb after amputation; but, although the simile has been frequently repeated, physiologists are well aware that it is only to a limited extent correct. The vessels, no doubt, are torn across in the course of the separation of the placenta, but, *with this exception, there is no real breach of tissue, as nature has for many weeks been preparing for the process of separation.* At birth the inter-utero-placental tissue divides into two layers, as was formerly explained, one of these remaining adherent to the uterine wall, along with portions of the decidua serotina. If the womb be examined shortly after delivery, that part of it to which the placenta was attached will be observed to be thicker than the other portions, and projecting somewhat into the cavity of the uterus.

"Upon the surface, which is rugged and unequal, small clots, projecting from the orifices of the closed vessels, and so contributing to their efficient closure, are observed along with shreds of membrane; and over the whole inner surface of the cavity of the organ remains of the decidua vera or of the subjacent textures, from which it has been stripped, are clearly to be made out. The discharge, then, which constitutes the lochia is, in the first instance, composed almost of pure blood."

Farther on the same author says: "The lochial discharge has a peculiar odor, sometimes offensive in character, but at no time, if it follows a normal course, is there a purulent discharge, nor is the process in *any way analogous to the suppuration which accompanies the reparative process of a healing stump.*"

Other obstetrical authors devote but little time and space to the description of the lochial discharge, but generally accept it to be due to retrogression, atrophy, and fatty degeneration of the muscular tissue of the uterus, mixed with shreds of decidua, etc.; and one writer (Tyler Smith) goes so far as to say, in his "Lectures on Obstetrics": "I look upon the exfoliative shedding of the mucous membrane or uterine decidua as in many respects analogous to the change which takes place in the uterine mucous membrane at the catamenial periods, and the lochia and menstrual discharges appear to be essentially the same, except that the lochial fluid is more profuse than the menstrual."

Much more might be said regarding the physiological conditions of parturition, but I believe it will be accepted by my auditors as a fact, that uncomplicated labor is a purely physiological act, for which ample preparation has been made in the system to provide for the increased demand made upon it, and to guard against all the ordinary incidents pertaining to that function. The excess of the fibrin in the blood of the pregnant woman is designed by nature to perform some important duty yet imperfectly understood by physiologists, although many hypothetical theories as to its function have been advanced, and await verification, but nothing, so far as I can find, has been suggested as to the probability that the increased fibrin in the blood of pregnancy may be an important factor in the elimination of effete material from the fœtus, by and through the circulatory system of the mother. This theory seems

quite as plausible as any offered in explanation of the physiological deterioration of the blood in pregnancy, and, I think, is worthy of further investigation.

Nature's hæmostatic is by the coagulation of the blood, and, as it is upon the presence of fibrin in blood that coagulation depends, it seems as though the hyperinosis of pregnancy through the augmented fibrin promoted rapid coagulation of the blood at the mouth of the uterine sinuses and checked undue hæmorrhage after the placental delivery.

Nature, in her all-wise provisions for the reproduction of her species, has, with regard to the human uterus, taken timely steps to insure the integrity of the generative tract after delivery.

By referring to the quotation just made from Dalton's "Physiology," we find that, so early as the commencement of the eighth month of gestation, a new mucous membrane has already been formed in the cavity of the uterus, covering and protecting it, except at the site of the placental attachment, while at this point the denuded tissue is covered with a semi-transparent film of soft consistence. To add greater protection to this part, the inter-utero-placental tissue divides into two layers at birth, one of these remaining adherent to the uterine wall, along with portions of the serotina, as already described by Leishman.

Here are two anatomical structures purposely designed to give protection to the cavity of the uterus, and whose presence our antiseptic brethren seem to ignore or be in ignorance of when describing the dangers of septic absorption through the *denuded* muscular tissue of the womb, a condition which really does not exist in the uterus at any time during parturition.

Sufficient description has been given of the lochial discharge to show that to compare it with a fluid composed of "dead and decaying tissue" is not tenable, not being founded upon well-established physiological data; and no pathologist has so far had the temerity to include it in his index of pathological fluids, where it should certainly be found if composed of morbid tissue.

Agreeing with Tyler Smith in his analogy between the lochial and the menstrual flow, I am confident that the dangers arising from it are more imaginary than real; and that in puerperal septicæmia it is simply one factor, and not the primary cause of the disease.

So far as the liability of communication through the physician, nurse, or surroundings of the patient is concerned, no reasonable person will doubt; but it does not follow that we are to look upon the uterus of the normal patient as a mine in which all sorts of poisons may be generated, to explode at any time.

From the very fact that everything pertaining to the reproductive organs, post partum, is absolutely physiological, the moment we begin to look upon it as a pathological state we are in great danger of interrupting or inhibiting physiological processes by our therapeutic agents designed to prevent possible pathological complications; and the question naturally arises, whether ante-partum syringing of the vagina does not thwart nature's means of lubricating the vagina for the passage of the child by removing the secretions upon the presumption that it may contain a

nidus of bacteria which will propagate in the after-coming fluid.

And here let me enter my firm protest against the antiseptic method of conducting normal midwifery cases, upon the ground of its being established upon misconceived theories of pathology, and in direct violation of the physiological laws of reproduction. I condemn it as being unnatural and irrational, and, failing to see the utility of the method, can readily appreciate the dangers that would arise from its universal adoption; and I believe that, at a time not far distant, the pendulum regulating obstetrical practice, now so far over on the side of antiseptics, will swing back and vibrate within the bounds of its physiological sphere.

In conclusion, let me, in the language of Professor Bedford, "urge upon you a profound respect for Nature; her temple is the proper place for the student of midwifery; there it is that she discourses most eloquently, though silently, and the best obstetricians will be those who have worshiped most zealously at her shrine," and I am convinced that your conversion will lead you to believe that normal parturition is always physiological.

A METHOD OF RELIEVING ASPHYXIA FROM BLOOD IN THE TRACHEA.

By H. H. A. BEACH, M. D.,
BOSTON.

ASPHYXIA from blood in the trachea is an accident to which the best surgeon is liable in operations involving the mouth, larynx, trachea, and their vicinity, unless the head-suspension method of Rose, which is impracticable in some instances, is employed. This often alarming emergency may be met promptly and effectively by an expedient that, so far as I can ascertain, originated with Dr. Henry J. Bigelow. As his house-pupil at the Massachusetts General Hospital, in the year 1867, I had the opportunity of witnessing the first application of his method, in assisting at the operation where it was employed.

The patient was a woman, with a tumor of the upper jaw, who entered the hospital June 19, 1867, and the operation was performed publicly on the same day, before the hospital staff, a large number of practitioners, and the medical class of Harvard University, in the old operating theatre of the hospital, where the first public demonstration of *anæsthesia* by sulphuric ether was made. It was afterward commented on by Dr. Bigelow in the operating theatre as the *key* to success in the treatment of this emergency. The following transcript from the hospital records, then written by myself (vol. 129, p. 159), may have some interest for the profession:

"Patient, thirty-nine years old, enters hospital with a tumor of left side of face, extending over a space of about two inches in diameter, being adherent to the facial and zygomatic surfaces and malar process of the superior maxillary and the inner surface of the malar bone. It protrudes one half of an inch beyond the zygomatic process of the malar bone, extends into the antrum, is elastic, has a uniform surface, and of late has grown rapidly. One year and a half ago a tumor was removed from the facial surface of the superior maxilla of that side.

"*Operation.*—Dr. Bigelow made a semilunar incision of five inches, from the commissure of the lips to the middle of the space between the eye and the ear; a straight one from the septum of the nose through the upper lip, and dissected up the flap to the border of the orbit. At this point respiration stopped; the surface of the body and extremities became livid and cold, although the hæmorrhage was inconsiderable and she was not inhaling ether. The head was immediately lowered, the feet were elevated, and the patient, who had not respired for eight or ten seconds, during which the pulse had continued to beat, was suddenly found to be pulseless. The operation was stopped, and the usual efforts were made to induce her to breathe. A catheter was passed into the trachea by the mouth, through which air was blown unsuccessfully. Two or more minutes had now elapsed without pulse or respiration, the operator expecting, as not infrequently happens, a full respiration with some gurgling from collected blood; but it was now evident that no time was to be lost. Dr. Bigelow opened the trachea with one stroke of the scalpel, and then with his mouth sucked a certain amount of liquid blood from the trachea, at the same time inflating the lungs by passing the catheter down the trachea through the opening *beyond the point of obstruction*; galvanism was then most thoroughly applied to the cardiac region, but it was only after the lapse of what seemed to be from five to eight minutes that the first inspiration took place. During five minutes more the patient was unable to breathe without inflation, after which her breathing was good and the pulse returned. Both increased in strength and frequency until it was thought best, after consultation with Dr. J. Mason Warren, Dr. Clark, Dr. Cabot, Dr. George H. Gay, and Dr. Hodges, to continue the operation and remove the diseased mass. The zygomatic arch, the external angle of the orbit, the palatine arch between the second incisor and canine teeth, and the nasal process of the superior maxilla, were successively divided by a bone-forceps. Upon prying the jaw down from its attachments, it crushed like an egg-shell, having become thinned by absorption. The débris were removed together with the tumor, which was lobulated, friable, and very vascular. General oozing was checked by sponges dipped in liquor ferri subsulphatis. Six vessels required the ligature. Wound closed with sutures."

The value of this use of the elastic catheter in expelling blood-clot was so evident in the case just described that the hospital tracheotomy case has from that time been supplied with one for this especial purpose, and it has been a common practice of the surgeons to carry a catheter in going to a case requiring tracheotomy. In the "Boston Medical and Surgical Journal" for December 14, 1882, Dr. M. H. Richardson calls attention to this subject in an able article entitled "Tracheotomy, with a Report of Three Cases." Dr. Richardson informs me that the idea of employing the catheter, as described, was derived from the teaching of Professor Bigelow. In the discussion which followed the reading of Dr. Richardson's paper before the Boston Society for Medical Observation, Dr. Porter, Dr. Gay, Dr. Richardson, and Dr. Bolles dwelt upon the advantages which an elastic catheter thus introduced offers. Following that discussion, Dr. George W. Gay read an interesting paper on "Tracheotomy in Croup" before the American Surgical Association, at Washington, D. C., on May 2, 1884, that was published in the "Medical News" for July 12, 1884. His experience was, like that of Dr. Bigelow, in a case of sudden and great emergency. Dr. Gay has kindly furnished me with the notes of this case, which occurred at the City Hospital,

March 30, 1882. The vertebral artery and vein had been wounded in a gunshot injury, and the hæmorrhage into the pharynx and trachea was from a hidden source, a direct communication existing between the pharynx and the wounded vessels. The pharynx was flooded with blood, and through the larynx the trachea soon became blocked. This occurred whenever the patient was turned on his side or face—a position necessary to afford an examination of the wound or permit the extraction of the ball. Dr. Gay met this emergency promptly and successfully by tracheotomy and the catheter. This had never occurred to him before, and was then suggested by the alarming condition of his patient, who lived one week after his resuscitation without a recurrence of the hæmorrhage. He died of pleurisy and pericarditis, as shown by the post-mortem examination, which also disclosed the comminution of the transverse processes of vertebræ in the wound, the wound of the vertebral artery and vein, and their communication with the pharynx and larynx.

The essential point in the manœuvre is to push the end of the catheter beyond the point where the clot obstructs the trachea, so that the air forced through the catheter may expel the clot by driving it upward. Should the pressure be insufficient to clear the trachea, it may be aided by compressing the chest, as suggested by Dr. Bigelow.

A CASE OF FOREIGN BODY IN THE BRONCHUS.*

By JOHN A. WYETH, M. D.,

PROFESSOR OF SURGERY IN THE NEW YORK POLYCLINIC.

ON September 7, 1884, Albert Austin, aged twelve years, residing at Wallingford, Conn., while in the act of projecting a pin-dart from a blow-gun, made a sudden inspiratory effort, and carried the missile backward into the trachea.

According to the statement of his mother, a woman of great courage and presence of mind, as I have reason to know, he coughed violently, gasped for breath, turned blue in the face, and for a few minutes seemed on the point of suffocation. Fortunately, these symptoms disappeared, and the boy only suffered from a slight cough. The mother gave him a tumblerful of warm salt water, but this did not make him vomit until after the symptoms of asphyxia had disappeared.

He was seen by the family physician, Dr. J. D. McGaughey, who, after careful examination, located the body in the bronchus, and ordered the patient to be kept quiet. The boy was seen by a number of physicians within the next three days, in Wallingford and New Haven, and, on the 11th of September, he was brought to this city and referred to me, by the courtesy of my friend, Dr. E. H. Grandin.

On that day he was examined by Professors Leaming and Elsberg and myself, with Dr. McGaughey. The physical signs pointed to its lodgment in the right bronchus be-

yond the first bifurcation. At this point there was a hissing, fluttering sound in both respiratory acts. In the anterior portion of the right lung the respiratory murmur was diminished. On the left side the vesicular murmur was normal.

Professor Elsberg, after a careful laryngoscopic examination, located the foreign body in this bronchus. Professor Leaming, Dr. McGaughey, and I concurred in the diagnosis. On the next day, acting with the advice and in the presence of these gentlemen and the house staff at Mt. Sinai Hospital, I performed tracheotomy at the lowest available point.

I introduced my little finger downward as far as it would reach, and upward to the glottis, without feeling the dart. With the patient on his back, his head hanging over the edge of the table, I then introduced a long, delicate trachea-forceps down to the bifurcation and off into the right bronchus. The jaws were then slowly opened and advanced a quarter of an inch, closed, and withdrawn, in order to see if I had grasped the pin. This manœuvre was repeated on every face of the bronchial circumference, and in its length.

Assured, from the careful search, that it was beyond the reach of the forceps, at the suggestion of Professor Leaming, I introduced a loop of silver wire, hoping that it would pass into the subdivision of the bronchus in which the dart was lodged. This repeatedly proved futile, and, feeling that I had made every justifiable effort, the operation was ended by passing silk sutures through two of the divided rings of the trachea and stitching these to the integument on either side of the wound. The strings were tied to adhesive strips, and these applied so that the trachea was kept wide open.

The patient recovered without any accident or marked exacerbation of temperature. He coughed and expectorated bloody mucus in small quantities for two or three days.

On September 24th Professors Jacobi, Janeway, and Ripley, at my solicitation, examined the patient. The first two gentlemen named could not, from the physical signs elicited, locate the missile, or feel assured that it was in the respiratory tract. Dr. Ripley held that it was in the left lung, believing that it had shifted from one bronchus to the other. It was deemed advisable, as a result of this consul-



tation, to keep the tracheal wound open, in the hope that, if the pin became loosened, it might be ejected without lodging in the larynx, and, in order to do this safely, I determined to introduce a silver cannulated tube.

* Presented before the New York Pathological Society, October 22, 1884.

When I anæsthetized the patient on the following morning, September 25th, I determined also to again search for the dart, having had made an instrument for this especial purpose.

The boy was placed on his right side, with the head hanging down, so that the blood would flow into the mouth or out of the wound, which bled considerably from the granulation-tissue broken up by the exploration. While in this position I introduced my finger well down the trachea, searching for the dart. The patient became blue from the arrest of respiration, and when I withdrew my finger he inspired deeply, and followed this with a violent and prolonged expiratory effort, in which I placed my thumb in and occluded the tracheal wound. I again introduced my finger with the same result, and, after this, introduced the trachea-tube. At this juncture the patient, being only partially anæsthetized, made some spasmodic movements of the muscles of the throat, and seemed again threatened with asphyxia to such an extent that I removed the tube from the trachea. At this moment the dart was seen hanging from the corner of the boy's mouth.

The wound was closed with adhesive strips, and in two days' time the patient returned to Connecticut. He is perfectly well at this date, October 22d.

MORE CLINICAL FACTS REGARDING THE HYDROCHLORATE OF COCAINE.

By I. HERBERT CLAIBORNE, JR., M. D.,

CLINICAL ASSISTANT TO THE CHAIR OF OPHTHALMOLOGY IN THE NEW YORK POLYCLINIC.

IN the last issue of this journal were reported several cases illustrative of the remarkable anæsthetic effect of the hydrochlorate of cocaine, occurring in the private and hospital practice of Dr. E. Gruening of this city.

Since the last publication Dr. Gruening has performed two iridectomies (for artificial ripening of cataract), one operation for squint, and one for pterygium, and has applied the actual cautery to the mucous membrane covering the inferior turbinated bone, without causing pain.

In addition to these, there is also recorded below an advancement of the external rectus, in which there was considerable pain:

CASE I.—A German, a male, aged seventy-five, with unripe senile cataract. Twelve drops of a two-per-cent. solution of cocaine hydrochlorate were instilled into the eye—four drops every five minutes. Five minutes after the last instillation all the steps of artificial ripening of cataract, even the clipping of the iris, which had given pain in all the other cases, were tolerated without pain or resistance. In fact, the patient was giving the history of his trouble during the operation, and asked for the chloroform after it was finished.

CASE II.—An Irish woman, aged fifty, also with unripe senile cataract. Instillations were made as in Case I, and artificial ripening was done without pain in any step of the operation.

CASE III.—C. D., a female, aged twenty-seven, with strabismus convergens of the left eye. Twelve drops of the solution, instilled as in Case I, rendered the eye completely anæsthetic. As the internal rectus was pulled forward and cut, the patient winced slightly. When asked, after the operation, if she had had pain, she said she had had none, but had felt us pull something.

CASE IV.—Same patient as in Case III. Advancement of the external rectus of the same eye. Instillations as before. The patient tolerated the speculum, the forceps, and the cutting of the conjunctiva without pain. All the other steps of the operation, however—exposure of muscle, tenotomy, and insertion and tying of sutures—were attended with considerable pain. Tenotomy of the internal rectus of same eye had been done five days before.

CASE V.—A young man, aged nineteen, with pterygium internum, encroaching about two lines upon the cornea. Instillations were made as in the preceding cases. There was absolutely no pain or resistance during the operation. As the first suture was finished, the patient said he felt very weak and asked for water. Immediately afterward he vomited profusely. When asked if the pain had caused him to vomit, he said no, that it was from fright. A few minutes after the operation he complained of the stitches hurting him a little.

CASE IV.—S. M. H., a male, aged forty, with hypertrophy of the mucous membrane covering the inferior turbinated bone. The patient was placed in the operating chair, with his head somewhat lower than his body, and eighteen drops of the same solution were instilled into the inferior meatus, and, as nearly as possible, on the mucous membrane of the inferior turbinated bone. Six drops were instilled every three minutes. A few minutes after the last instillation the actual cautery was applied. The patient said he had had no pain at all, and seemed very much surprised and pleased.

In his private practice, Dr. Gruening has several times passed the canaliculus knife and probes in cases of lachrymal stricture, with great amelioration though not complete absence of pain.

To sum up our clinical experience, so far, with the agent, we have, then, two cataracts, three iridectomies, one squint, one advancement, and one pterygium—not including foreign bodies in the cornea.

In the two cataracts and in one iridectomy there was slight pain in cutting the iris; in the two other iridectomies there was no pain. There was no pain in the squint, considerable pain after we had got beneath the conjunctiva in the advancement, and no pain, but vomiting, probably from fright, in the pterygium.

Considering the high price of the hydrochlorate of cocaine, it has been suggested to the minds of many that its cheaper sister alkaloids—caffeine, theine, theobromine, and guaranine—might be possessed of similar anæsthetic properties.

As there are no stable single salts of these alkaloids, extensive experimentation has been made by Dr. Gruening with the double salts, the salicylate of sodium (two and a half per cent.) and caffeine (four per cent.), and the benzoate of sodium and caffeine (four per cent. each) in watery solution.

In no case, however, has he obtained any anæsthetic effect with either.

Listerism in Abdominal Surgery.—Mr. Tait and Mr. Thornton are again at variance on the old subject of statistics, judging by a letter from the latter gentleman, published in the "American Journal of Obstetrics" for September, in which Mr. Tait is called to a sharp account for his strictures upon antiseptic ovariotomy. Mr. Thornton states that his own results are from three to eleven per cent. better than Dr. Bantock's, while Dr. Bantock's "Listerian" mortality is eight per cent. lower than that of his non-antiseptic cases."

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A REMONSTRANCE AGAINST THE ACCEPTED THEORY OF
INFLAMMATION.

HE must be either a very rash or a very bold man who can deliberately set himself up as the extinguisher of doctrines which have been taught to generations of medical men all over the world. Yet its very audacity, apart from the high reputation of the writer, demands attention for Mr. T. Wharton Jones's "remonstrance," published in a late number of the "Lancet." Medicine is still overgrown with venerable traditions, but we have already witnessed the uprooting of many an ancient theory, and, in this age of investigation, doubtless there will be many others to be cleared away by the same rough treatment. But to attack the doctrines of Cohnheim, to which so many of the present generation of medical men listened in their student days, to assure us that the white corpuscle, which has so often been followed in its erratic course, does not stray from the straight and narrow capillary way—this is radical indeed.

We wish that Mr. Jones had shown a little more of the "tender grace of courtesy," as Mr. Tait lately expressed it, in dealing with his opponents: and Cohnheim's great name, although it need not shield the lost teacher from criticism, should cause that criticism to be tempered with somewhat of reverence. But as to the "remonstrance." "It is addressed," says the writer, "to professors of physiology and pathology, against teaching, in their writings, lectures, or occasional orations, that the white corpuscles of the blood escape from the interior of small vessels, until they have verified it scientifically, by actual observations of their own, as a fact in nature." With this open challenge, the author proceeds, in vigorous English, to state his own observations upon the subject, which, he says, antedated those of Cohnheim and his followers by several years.

His deductions are: 1. That the white corpuscles do not emigrate from the interior of blood-vessels by forcing their way through the vessels' walls. 2. That, when these leucocytes are found in the extra-vascular tissues, the true explanation is, not that they have abandoned the vessels, but that the vessels have become destroyed and left their contents uninclosed. In other words, the free leucocytes are not to be regarded as the cause, but as the result, of an inflammatory process. The supposed white corpuscles which are so often described and figured as being caught in the act of making their way through a vessel's wall are not white corpuscles at all, but merely nuclei in the wall of the capillary.

In order to satisfy himself of the hopeless ignorance of the scientific world upon this subject—or, as he modestly expresses it, desirous of learning anything which might have escaped his notice on the point—Mr. Jones asked the opinions of "pro-

fessors of note," none of whom, he affirms, were able to satisfy him. Two gentlemen did invite him to their laboratories, and tried to make him see with their eyes the emigration of the leucocyte, but in vain; he still remained unconvinced.

Ordinarily, "seeing is believing," but whoever has ever seen, or supposed he was seeing, the emigration of white corpuscles in an inflamed mesentery, and been told by a teacher of renown in pathology that such was the case, and has all these years treasured the conviction that both he and his teacher were right, must now suppose that his senses deceived him, and that his teacher of pathology was the victim of a like deception. To this distressing conclusion does the learned writer point him, and with no way of escape offered. The only inference to be drawn from his statements is, that the majority of experimental pathologists are vitally wrong in regard to one of the elementary observations—one that is supposed to be within the range of the veriest beginner. Nor is there any hope for them, or for their coming pupils, unless they make a radical change in their ideas and acknowledge that what they have always regarded as emigrating white corpuscles are not white corpuscles at all, but stationary nuclei. This is a surrender that we do not look for at present.

The practical impression left after a perusal of Mr. Jones's polemic is that, for a reformer, he is altogether too sudden and violent in his methods. We do not object to his boldness in attempting to overturn a doctrine which has received such universal support; on the contrary, we admire his originality, and give him due credit for his researches. The simple suggestion is offered, however, that the author of a new theory would do well to fortify it by a series of patiently acquired facts before he proceeds to tear down a structure which has itself not been reared in a day. The destroyer of an old faith should certainly be prepared to offer some better substitute.

OPENING WEEK AT THE LONDON MEDICAL SCHOOLS.

IN accordance with time-honored custom, the 1st of October witnessed the great speech-making which inaugurates the opening of the hospital-schools of the British metropolis. It is a peculiarity of our English brethren that no institution, whether a flower-show or a medical school, is considered as fairly "opened" unless the ceremony has been duly preceded by an address—preferably by some exalted personage, or, failing that, by one who, if less elevated, is perhaps more intelligent. Seriously, all this speech-making produces not a little that is interesting and readable. Especially is this the case when one of the distinguished members of the medical profession makes the address. The annual addresses delivered before the students by men who stand in the front rank of medicine furnish us with a very good idea of the general drift of English thought on medical subjects. This year the British journals complain that too many of the lecturers shot over the heads of their youthful hearers, and one critic even goes so far as to characterize the October oration as a bore, suggesting as a substitute for the scattered inaugurals a monster mass-meeting of all the schools, at which the enthusiasm of those present should be raised to a

high pitch by "the burning words of a Gladstone, a Lidden, a Huxley, or a Paget."

It is rather severe on the gentlemen who give so much time and thought to the preparation of addresses to have the expression "stereotyped" applied to them. For us, they certainly possess no common interest, since they not only contain the noble thoughts of noble men, but point out the ideal at which the English student is expected to aim. Dr. Gowers's remarks in particular, are very suggestive, combining as they do sound wisdom with the broadest humanity. If these addresses indicate, as we think they do, the spirit of British medical training, we may well regard its standard as high and its aims as pure and true. We wish that more of our own schools were opened with some of the same "plattitudes."

MINOR PARAGRAPHS.

CHEESE POISONING IN MICHIGAN.

At the recent quarterly meeting of the Michigan State Board of Health, the Secretary, Dr. Henry B. Baker, to whose courtesy we are indebted for an account of the proceedings, continued his report on this subject. Seven outbreaks within the State had been reported during the year, one hundred and ninety persons having been affected in all, but none fatally. The symptoms were very similar in all the cases, consisting of pain in the stomach, muscular cramps, coldness of the extremities, and great prostration, with violent retching and purging, lasting for several hours. In most cases, the larger the amount of cheese that had been eaten the more violent were the symptoms. Specimens of the Lowell cheese had an acid reaction and a peculiar, strong odor, believed to be due to caprylic acid or caproic acid. Examined with a one-tenth-inch immersion objective, this cheese was found to contain the mycelium of a mold, and to be swarming with several kinds of bacteria in active movement. Specimens had been sent to Professor Vaughan, of the University of Michigan, and to Professor Burrill, of the Illinois State Industrial University, for further examination and experiment.

THE RELATIONS BETWEEN MEDICINE, SURGERY, AND OBSTETRICS IN LONDON.

A LETTER from Dr. Robert Barnes, in the "American Journal of Obstetrics" for September, has attracted much attention, not because of any new facts therein stated, but by reason of the clear and forcible way in which the case is put. It has long been known to us in America that our English brethren drew a very sharp line between "physicians" and "surgeons." But we believe that the writer's statements as to the position occupied by the English obstetric physician have proved a revelation to most of his American readers. We are so accustomed to look upon London medical men as the willing subjects of tradition and precedent that Dr. Barnes's letter arouses not merely our surprise, but our admiration at his boldness in casting off the chains which have so long bound his branch of the profession. The absurd jealousy of English surgeons toward their medical colleagues and the narrow field to which the latter are limited are nothing compared with the limitations imposed upon the obstetric physician.

We can imagine the commotion which this letter will cause in the London surgical ranks. Doubtless there will be a reply from the other side, but Dr. Barnes may rest assured that our sympathies are with him in his struggle against the "arbitrary conventional rules which have become obsolete by the progress

of medicine, and the juster and broader system of medical education now prevailing."

NEWS ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending October 28, 1884:

DISEASES.	Week ending Oct. 21.		Week ending Oct. 28.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid Fever.....	50	13	60	11
Scarlet Fever.....	25	5	31	4
Cerebro-spinal meningitis.....	6	4	4	4
Measles.....	36	4	41	3
Diphtheria.....	43	30	45	28

Bellevue Hospital Medical College.—At a meeting of the faculty, held October 23d, Dr. Paul Grawitz, assistant to Professor Virchow, of Berlin, was appointed professor of pathological anatomy and director of the Carnegie Laboratories. We learn that no doubt is felt that Dr. Grawitz will accept the appointment.

The Fairfield County, Conn., Medical Society will hold its semi-annual meeting at Bridgeport, in the new Bridgeport Hospital, on Tuesday, November 11th, beginning at 10 A. M. A paper will be read by the Vice-President; an address on "Some of the Famous Surgeons and Hospitals of Europe" will be given by Dr. Robert F. Weir, of New York; and a case will be related by Dr. A. E. Adams, of Danbury. A dinner is to be given at 1 P. M., and the dedication exercises of the new hospital will begin at 2.30 P. M. It is expected that the Governor of the State, with his staff, the Mayor of Bridgeport, and a number of other distinguished persons will be present. The hospital will be open for inspection after 9 A. M.

The University of Vermont.—We learn that Dr. W. Oliver Moore, one of the surgeons of the Manhattan Eye and Ear Hospital, of New York, has been appointed professor of diseases of the eye and ear in the medical department of the university; also that Dr. Stephen S. Burt, of New York, has been appointed to the chair of physical diagnosis.

The Death of Dr. Allen S. Church, a well-known and highly respected practitioner of this city, took place on Friday, October 24th. Dr. Church was a graduate of the Castleton Medical College, of the class of 1848, and a member of the Medical Society of the County of New York, of the New York County Medical Association, of the Academy of Medicine, and of several other medical societies. He was a native of Massachusetts.

The Death of Dr. William H. Ensign occurred on Sunday, October 26th, in the fiftieth year of his age. Dr. Ensign was a native of Connecticut and a graduate of the Medical Department of the University of the City of New York, of the class of 1861. During the late civil war he served with credit as an assistant surgeon in the army, and at the time of his death he was one of the police surgeons of this city.

The Death of Dr. Oulmont, of Paris, is announced in our French exchanges. He had reached the age of seventy years, and was an honorary physician to the Hôtel Dieu. The "Progrès médical" states that he left the sum of eighty thousand francs in bequests to various scientific and charitable organizations.

Professor Semmola, of Naples, as we learn from the "Progrès médical," has recovered from an attack of the cholera.

The Death of Professor Somma, of Naples.—While the whole medical world will rejoice at Professor Semmola's recovery, it will be equally pained to learn of the death of Professor Luigi Somma, who fell a victim to the same disease on the 19th of September. Dr. Somma was the editor of the "Archivio di Patologia Infantile," a most creditable journal of pædiatrics.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from October 19, 1884, to October 25, 1884:*

AIDEN, CHARLES H., Major and Surgeon. Relieved from duty at Fort Yates, D. T., and ordered for duty at Fort Snelling, Minn. S. O. 125, Department of Dakota, October 20, 1884.

VICKERY, R. S., Major and Surgeon. During temporary absence of Major J. C. McKee, Surgeon, U. S. A., Medical Director of the department, in addition to his other duties, will assume charge of the office of the Medical Director. G. O. 34, Headquarters Department of the Columbia, October 8, 1884.

WINNE, C. K., Captain and Assistant Surgeon. In addition to his duties as Post Surgeon at Benicia Barracks, will also attend the sick at Benicia Arsenal, Cal. S. O. 122, Headquarters Department of California, October 13, 1884.

STRONG, NORTON, First Lieutenant and Assistant Surgeon. Assigned to duty at Fort Union, N. M. S. O. 198, Department of Missouri, October 4, 1884.

PHILLIPS, JOHN L., First Lieutenant and Assistant Surgeon. Transferred from Department of the East to Department of Dakota. S. O. 245, A. G. O., October 18, 1884.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending October 25, 1884:*

BLOODGOOD, DELAVAN. Promoted to the grade of Medical Director, August 22, 1884.

OBERLY, AARON S. Promoted to the grade of Medical Inspector, March 28, 1884.

WELLS, HENRY M. Promoted to the grade of Medical Inspector, August 22, 1884.

Society Meetings for the Coming Week:

MONDAY, November 3d: Medico-Chirurgical Society of German Physicians (private); Morrisania Medical Society (private); Brooklyn Anatomical and Surgical Society (private); Utica, N. Y., Medical Library Association; Boston Society for Medical Observation; Providence, R. I., Medical Association; St. Albans, Vt., Medical Association.

TUESDAY, November 4th: New York Neurological Society; Buffalo Medical and Surgical Association; Elmira, N. Y., Academy of Medicine; Ogdensburg, N. Y., Medical Association; Medical Society of the County of Hudson, N. J.; Androscoggin County, Me., Medical Association.

WEDNESDAY, November 5th: Medical Society of the County of Richmond, N. Y.

THURSDAY, November 6th: New York Academy of Medicine ("On the Pathological Anatomy of Sensory Aphasia," by Dr. R. W. Amidon; "The Asiatic Cholera at Suspension Bridge in 1854, and its Lessons—what we know of Cholera," by Dr. Frank H. Hamilton); Medical Society of the County of Orleans, N. Y.; Society of Physicians of the Village of Canandaigua, N. Y.; Boston Medico-Psychological Association.

FRIDAY, November 7th: Practitioners' Society (private).

SATURDAY, November 8th: New York Medical and Surgical Society (private); Obstetrical Society of Boston (private); Worcester, Mass., North District Medical Society.

Letters to the Editor.

THE EFFECTS OF ALCOHOL POISONING ON THE HEART.

OSWEGO, N. Y., October 24, 1884.

To the Editor of the New York Medical Journal:

SIR: I have been forcibly impressed with the effects of alcoholic poison upon the action of the heart in several cases that have come under my observation—cases that gave no evidence of mental disturbance characteristic of *mania a potu*. The mind was clear and rational, save an expression of an overpowering sense of fear of speedy dissolution. The exhibition of anxiety, fear, and sometimes terror, which no assurance from me could allay, was pitiable. This state of mind is instinctive, due to the effect of alcoholic poison upon the action of the heart. It is analogous to the overpowering sense of fear of impending dissolution experienced in angina pectoris, and in the sudden paroxysms induced by fatty degeneration of the heart, but there is no dyspnoea or orthopnoea. The subjects had been drinking daily, for a long time, a large quantity of alcoholic stimulants, until the system had become thoroughly saturated and poisoned. The stomach was irritable and refused to retain food; the pulse small, thready, and intermittent; the heart's action very irregular; the sleep fitful and disturbed, the patients waking with a start, in a nervous tremor and abject terror, begging for more drink and insisting that they must have it or they would die.

This thirst and craving for more drink are, in a great measure, due to the demand of the flagging heart for support to enable it to continue its work; the demand is imperative, hence the instinctive sense of fear, amounting to, in some cases, abject terror. A heart-stimulant and restorative soon appeases the desire for more stimulus and allays the fear. I found that nitro-glycerin, one one-hundredth of a grain, given every half-hour or hour, soon steadied the pulse and gave strength and uniformity to the heart's action, and caused the importunate demand for more alcoholic stimulus and the abject fear to cease. The effect was almost immediate; the pulse soon became full and steady, and the heart restored to its rhythmic action; the face soon became flushed, and they complained of a sense of cerebral fullness, which soon passed off.

October 22d, about 1 P. M., I was hastily called to visit Mr. D., a resident of the western part of the State, who was here on business, and had, he told me, been drinking during the past three weeks, on the average, fifteen glasses of lager beer a day, winding up each night on a half-pint of whisky to procure sleep. He had vomited twice that morning, felt very weak and nervous, and said that he feared he would not live long. His pulse was small, feeble, and intermittent; the heart's action was very irregular. I gave him one third of a grain of sulphate of morphia, and prescribed thirty grains of bromide of potassium, to be taken every fourth hour, well diluted with water, until sleep was induced, and ordered a bowl of beef-tea to be taken at intervals as his stomach could retain it. I also ordered entire abstinence from alcoholic stimulus, and trusted to a friend who was with him to see that the order was obeyed.

I called again about 6 P. M., and found him exceedingly nervous and depressed, more alarmed as to his recovery, and insisting that his wife should be sent for. His pulse was a little more steady. He had taken advantage of a brief absence of his friend, and slipped down below and taken two drinks of whisky at the bar, and had vomited some oyster-broth which he had taken in place of the beef-tea. I ordered a continuance of the bromide of potassium, and left one fourth of a grain of sulphate of morphia, to be taken in the night if sleep was not obtained.

He had had about two and a half hours of fitful, disturbed sleep in the afternoon.

I called the next morning at eight, and found him in a deplorable condition; he was in a violent nervous tremor, the pulse feeble and intermittent; he was sure that he would not live much longer, and insisted that his wife should be sent for immediately. His friend told me that he had had two intervals of sleep of about two hours and a half each, waking up each time in a nervous, frightened state and begging for more stimulus, which he had refused to give him; he had vomited the morphine and bromide of potassium. I immediately gave him an ounce of whisky and a pill of nitro-glycerin. I remained by him about an hour; his pulse immediately began to gain strength, fullness, and steadiness, which continued about half an hour, and it then began to grow weak and unsteady. I then gave him another pill, which soon restored the strength and evenness of the pulse, and he ceased his abject entreaties for more whisky, which up to that time had been almost constant, and expressed no more fear of dying. His stomach remained irritable through the day; he was only able to retain small quantities of iced milk; the pills were repeated every second hour until the afternoon, when they were discontinued, as his pulse had recovered from its weakness and irregularity. He was able to return to his home the next day.

An acquaintance, of unusual strength and vigor of constitution, has studied the effects of alcoholism upon his own person; it invariably causes an irregular and intermittent pulse and irregular action of the heart, but seldom affects his brain.

A. S. COE, M. D.

Proceedings of Societies.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK

Annual Meeting, held October 27, 1884.

The President, Dr. S. O. VAN DER POEL, in the chair.

The Eligibility of Homœopathic Graduates to Membership.—The minutes of a meeting of the Comitia Minora were read, showing that among the candidates for membership there were two gentlemen who were graduates of homœopathic colleges. To these candidates the following-named questions had been put: 1. Whether they belonged to a homœopathic medical society. They had answered, "No." 2. Whether they were willing to drop their sectarian name. They answered that they had never practiced under a sectarian name, and never expected to do so. 3. Whether they were connected in any way with any homœopathic medical journal. To this they had answered, "No." 4. Whether they were willing to be governed by the laws of the Medical Society of the County of New York. They had answered, "Yes." The Comitia therefore recommended them for membership.

Dr. A. JACOBÍ said that Dr. ELLSWORTH ELIOT, who was unable to be present, had requested him to offer a resolution to the effect that a diploma from a homœopathic medical college did not entitle the holder to membership in the society.

The resolution was laid on the table.

The two candidates were then unanimously elected to membership.

The Treasurer's Report was read and approved, and an assessment of two dollars was ordered to be levied in addition to the annual dues for the coming year, this sum being considered necessary for the prosecution of certain work undertaken by the society.

Election of Officers.—There being but one name on the list for each of the following offices (the other nominees having withdrawn their names), the secretary was instructed to cast an affirmative ballot for each of them. This having been done, Dr. DANIEL LEWIS was declared elected president; Dr. LAURENCE JOHNSON, vice-president; Dr. WESLEY M. CARPENTER, secretary; Dr. CHARLES H. AVERY, assistant secretary; and Dr. ORLANDO B. DOUGLAS, treasurer.

On ballot, five censors were elected, as follows: Dr. JOSEPH W. HOWE, Dr. FRANCIS M. WELD, Dr. HENRY T. PEIRCE, Dr. FREDERICK R. S. DRAKE, and Dr. WILLIAM OLIVER MOORE.

The Report of the Board of Censors, including the report of the council for the society, was read by Dr. J. W. HOWE. These documents dealt chiefly with the results of the work undertaken by the society in contesting the validity of the charters of certain medical colleges.

The Report of the Committee on Hygiene was read by Dr. VAN SANTVOORT, and touched upon the subject of the public-school fund, the public baths, the ventilation of sewers, and contagious ophthalmia in residential schools. Regarding the ventilation of sewers, the report stated that, while the system now in use might be open to criticism, the present committee was not prepared to recommend any better plan. That part of the report relating to contagious ophthalmia among the inmates of industrial and residential institutions for the young in and about New York city dealt with the statistics of eye diseases of a communicable nature among this class, the means of their introduction and spread, and the injury occasioned thereby, and recommended the passage of a law making it compulsory, before receiving a child into one of these institutions, to submit its eyes to examination by a competent physician; and, second, that the eyes of all inmates be examined from time to time, and that those found to be suffering from contagious ophthalmia be properly isolated and treated.

Dr. C. R. AGNEW said that about two years ago, by request, he examined into the extent to which contagious ophthalmia prevailed in residential institutions in and about New York, and he had become convinced that the eyes of many of the inmates had been lost or permanently injured by this disease, probably introduced by a new-comer brought directly from a filthy home by some society whose object was to prevent cruelty to children. Some legislation upon the subject was desirable, and he therefore moved that the present Committee on Hygiene be continued as a special committee on contagious ophthalmia, to report at an early date. Carried.

Prize Essays.—Dr. C. C. LEE, of the Committee on Prize Essays, reported that but a single essay had been submitted, and that this, while it showed a good deal of learning and research in an effort to establish the mutual histological interdependence of cancer and tubercle, was not considered by the committee as worthy of the prize.

The Society declines to indorse a Candidate for Public Office.—Dr. RUDOLPH TAUSZKY moved that the society indorse the nomination of Dr. M. J. B. Messener for the office of coroner.

Dr. JACOBÍ opposed action in the matter for two reasons: First, that the county and the State medical societies had expressed their disapproval of the office of coroner as it now exists; and second, that this was not a proper place to bring in politics.

The motion was laid on the table.

The Qualification for Membership.—Dr. JACOBÍ moved a suspension of the by-laws, so as to allow of action upon a resolution of the following purport:

Resolved, That the Comitia Minora recommend no applicant for membership unless he is a graduate of a medical college in

good standing, or a licentiate of a non-sectarian State or county medical society of this or some other State; or, if his certificate is of a sectarian character, unless the applicant declares in writing that he is non-sectarian in principle and practice.

This resolution could be acted upon at the present meeting only by a suspension of the by-laws, which would require unanimous consent of the members present.

Dr. C. R. AGNEW was opposed to the suspension of the by-laws, for the resolution seemed to be one requiring deliberation, and there was no necessity of its immediate adoption.

Dr. H. G. PIFFARD explained that the resolution could be acted upon only at an annual meeting, and, if the by-laws were not suspended on the present occasion, would have to lie over until next year.

Dr. AGNEW still doubted the wisdom of hasty action in the matter, and the resolution was consequently laid over.

Amendments to the By-laws.—An amendment to the by-laws was passed, abolishing the meeting in June. Another proposed amendment, providing for forfeiture of membership for non-payment of dues, was laid on the table, but it was ordered that the Comitia Minora report at the next meeting some efficient plan of inducing delinquent members to pay their dues.

NEW YORK PATHOLOGICAL SOCIETY.

Meeting of October 8, 1884.

The President, Dr. GEORGE F. SHRADY, in the chair.

Carcinoma of the Stomach.—Dr. SATTERTHWAITE was called in consultation, on the 7th of September last, to see a gentleman who had had a light hemiplegic attack, affecting the right upper and lower extremities. He largely recovered the use of the extremities within twenty-four hours. On inquiry, it was learned that the patient had been losing flesh rapidly during the preceding month, less rapidly for six months, and to some degree during two years. So far as could be learned by his physician, he had not been suffering from any special disease. There was nothing abnormal about the urine, lungs, or heart; there had been some pain in the epigastric region, but no tumor could be felt. For a month he had been unable to retain solid food, and a cachectic appearance developed. Two weeks before death the patient had another hemiplegic attack, was unable to move the right lower and upper extremities, and had difficulty with speech and swallowing, but after a short time this difficulty almost entirely disappeared. The last four or five days of his life he refused to take food, saying he preferred starvation to the pain attending vomiting. Death took place from starvation. At the post-mortem examination a circular patch of thickening, of about the size of a fifty-cent piece, was found at one side of the pyloric end of the stomach. The patch could be felt but not seen. Doubtless it had acted somewhat as a valve, obstructing the exit of food through the pyloric opening, which was constricted to the size of a lead-pencil. The pancreas contained a few hard nodules. Dr. Satterthwaite had preferred to exhibit the specimens to the society in their fresh state, before a microscopical examination had been made, but there was little doubt that the disease was carcinoma.

The President remarked that it would seem that malignant disease would have made greater progress within two years.

Dr. SATTERTHWAITE had seen a case in which the cancerous tumor had been felt at the pylorus for two years before death finally took place, and the symptoms of cancer dated back of that period.

Dr. J. C. PETERS said that the first specimen presented to the society, in 1844, was similar in appearance to that presented by Dr. Satterthwaite, and the patient had had many like symp-

toms, but the thickened patch at the pyloric end of the stomach was found on examination not to be carcinoma, but hypertrophied areolar tissue. It was considered a rare condition.

Dr. VAN GIESON thought the duration of gastric symptoms could not always be relied upon as an indication of the duration of the cancerous disease, as the latter might be engrafted upon the former.

Dr. CARPENTER mentioned a case in which he had found a cancerous nodule, about an inch in diameter, situated about three inches from the pylorus, but the patient had not complained of gastric troubles during life.

Naso-pharyngeal Fibro-Sarcoma.—Dr. LINCOLN showed a specimen which he had removed, July 22d, from a boy, sixteen years of age, who had never been very strong, and who had always suffered from nasal catarrh. He first noticed obstruction to nasal respiration, together with a tumor, in 1881. From this date he had suffered from frequent severe nasal hæmorrhage, usually coming on after active exercise, but sometimes during sleep. A physician had attempted to remove the tumor, which could then be seen through the nostril and mouth, by the ordinary polypus-forceps, but had failed. Dr. Lincoln saw the patient first, through the courtesy of Dr. Satterthwaite, on July 12th, at which time there was a noticeable fullness on the right side of the nose. The right nostril was filled to the margin by the growth, which pressed the septum to the left; the soft palate was deflected from the perpendicular, and below it, filling the naso-pharyngeal space, the tumor could be seen, apparently having its principal attachments to the vault of the pharynx and the roof of the nostril. It was exceedingly vascular, and evidently growing rapidly; therefore an immediate operation was advised, without preliminary treatment by electrolysis. On July 22d the galvanic-cautery wire was applied to the base of the tumor while the patient was under the influence of an anæsthetic, and Dr. Lincoln succeeded in cutting through the pedicle and drawing the tumor out entire through the mouth, no hæmorrhage taking place during the operation. The tumor measured four inches in its greatest length, and two inches and a half in thickness. The surface of attachment, which measured two inches by one and three quarters, was then cauterized. The weight of the growth was two ounces and three quarters. A week after the operation the cut surface presented a healthy appearance. The patient would not give his consent to a reapplication of the cautery for the purpose of preventing a renewed development of the growth.

The President thought there could be no comparison between this mode of operating and the old mode of preliminary tracheotomy, tamponing the pharynx, and removing the upper jaw. It seemed, however, that there were some cases of naso-pharyngeal tumors in which the wire could not be applied to the base of the tumor, on account of its extensive attachments. He mentioned two cases in which he had operated by removal of the upper jaw, the tumors having extensive attachments to the base of the skull, etc. One of the patients died, apparently as the result of an extension of the growth into the skull, and in the second case the result was similar, although death took place later. He now had a patient who was begging for a similar operation, but he hoped first to have a consultation with Dr. Lincoln as to the advisability of trying the galvanic cautery. The great difficulty in this class of cases was that usually they did not come under observation until it was impossible to apply the wire, and the general health was too greatly reduced from repeated hæmorrhages, etc., to make success from a surgical operation at all probable.

Dr. HOWE thought that even in the bad cases referred to, with such extensive attachments, the tumor might be removed piecemeal by the wire.

The President had had one such case in which a gentleman skilled in this manner of operating had removed a portion of the tumor with the wire, but, while the patient's condition was much improved thereby, the pain consequent on ulceration at the points where the wire had been applied deterred him from submitting to further treatment.

Dr. SATTERTHWAITE thought the operation which Dr. Lincoln had performed, at which he was present, had required a great deal of manual dexterity. A distinguished throat specialist had said that the tumor could not be removed except by first removing the upper jaw, but Dr. Lincoln performed the operation with the galvanic-cautery wire with a single application of the loop. The patient had had no hemorrhages since the operation, and had gained greatly in flesh and strength. He had been impressed very favorably with the operation, and would be glad to hear Dr. Lincoln's further experience with it.

Dr. LINCOLN said he had had six cases, two of which were still under treatment. In the four other cases he believed there was no possibility of recurrence. He had had no fatal result. With regard to the difficulties overcome during the operation, he referred to a case in which he had operated in 1875. The patient had been operated upon by the late Dr. Willard Parker, and also by Dr. Lutkins, who referred him to Dr. Lincoln. At the time when he saw him, the boy, five feet and a half high, weighed only sixty-eight pounds. His condition was such that death seemed inevitable, and several surgeons had said that no treatment was justifiable. The tumor had so developed as to cause protrusion of the right eye, and projected through the nostril to the margin of the upper lip, and into the mouth to such an extent that the tongue had to be depressed at night with a spatula to enable the patient to sleep. There had been frequent hemorrhages. Dr. Lincoln began preliminary treatment by electrolysis, making about twenty-five applications. The growth of the tumor was thus checked, hemorrhage ceased, and the patient recuperated so that the final operation could be undertaken with perfect safety. The wire was applied, and the tumor was removed entire without any hemorrhage. Some applications of the cautery were made subsequently, and there had been no signs of return of the growth since. The other cases were similar, but not quite so pronounced.

Fibro-Cyst of the Uterus.—Dr. PRUDEN presented a specimen which had been sent him by Dr. C. C. Stockard, of Columbus, Miss., the history of which had been published in the "Medical Record" for August 16, 1884. It was interesting principally on account of its large size. Together with the fluid contents which had been drawn off six days before death, it weighed one hundred and thirty-five pounds. Eight gallons and seven pints of fluid had been withdrawn by tapping. The microscopical examination showed the specimen to be a cystic fibroma of the uterus. It had developed in a negress who had borne children.

Intestinal Obstruction.—Dr. C. W. KNIGHT presented a part of the intestine and uterus which had been removed from the body of a negress, thirty-five years of age, unmarried, who had been the subject of constipation for a good many years, with frequent attacks of colic, but had never consulted a physician. Frequently her bowels did not move once in two weeks. After her last attack had continued two weeks she began to take purgative medicines, and in the third week she sent for a physician, who found no constitutional disturbance. She was up and about her room until the last day of her life, when she began to vomit copiously, had enormous distension of the abdomen, and died suddenly. At the autopsy the small intestine was found to be distended and congested, and about five inches from the cecum there was a constriction between two fibrous bands, which had produced a furrowed appearance in the gut, but had not caused

ulceration. The obstruction was immediately relieved on cutting the constricting bands.

Meeting of October 22, 1884.

The President, Dr. GEORGE F. SHRADY, in the chair.

General Carcinosis.—Dr. JOHN A. WYETH presented specimens obtained from a case in which carcinoma probably originated in the lumbar glands, with metastasis to the anterior mediastinum, liver, and bladder. The patient, a German, thirty-eight years of age, a machinist, was admitted to Mt. Sinai Hospital, September 10, 1884. Last May he noticed a swelling upon the left side of the umbilicus, which increased in size, extending down nearly to the symphysis pubis and into the left lumbar region, and gave him much inconvenience by its size and position. The patient lost eighty pounds in weight within four months, coughed, and sometimes expectorated blood. There was some bulging on the left side of the thorax, and enlargement of the supra-clavicular and axillary glands. The thoracic and abdominal tumors were nodular to the feel, and painful on pressure. Over the left side of the chest there was diminished respiratory murmur, with crepitant and subcrepitant râles and some dullness. There was marked laryngitis, with loss of voice and spasmodic cough. September 16th the patient suffered from severe pain in the left leg and thigh, the limb became cold and mottled, and the foot was anæsthetic. There was no pulsation in the femoral artery. The swelling of the left lower extremity continued to increase, with pain along the course of the artery. The patient's condition grew worse, and he died on the 15th of October. The visiting staff of the hospital agreed that there had been partial occlusion of the external iliac artery, which had given rise to coldness in the left lower extremity. Afterward swelling and hemorrhagic blebs occurred from thrombosis secondary to the partial occlusion. At the autopsy the tumor was found to occupy the left inguinal and lumbar regions, being covered by adherent mesentery and firmly attached to the vertebral column, the descending colon, and the left kidney. It arose apparently from the glands of the dorsal and lumbar regions, and completely surrounded the aorta and vena cava. The left external iliac artery was flattened, and there was thrombosis of the iliac vein extending into the left femoral. The left anterior mediastinum and lung were the seat of carcinomatous new growth, the tumor pressing upon the trachea and the great vessels; there were cavities in the left lung, and marked bronchitis and laryngitis. There were foci of carcinomatous degeneration in the liver and bladder.

The chief point of interest in the history of the case was the fact that last spring Dr. Gerster removed the left testicle, which he presented to the society as an illustration of tubercular testis. The records of the German Hospital also showed that the affection of the testicle had been regarded as tubercular.

Foreign Body in the Bronchus.—Dr. WYETH related a case, and showed the specimen. [See page 487.]

With regard to Dr. Wyeth's second case the President thought it possible that, had the patient been less profoundly under the influence of the anæsthetic, the foreign body might have been coughed up at the first exploration. He believed that most foreign bodies which entered the air-passages were, sooner or later, dislodged by violent expiration. In a case in which the body was pointed, the point being upward, as in Dr. Wyeth's case, he thought it safer to perform tracheotomy and explore the trachea and bronchi. Round bodies might perhaps better be treated on the expectant plan. He was once enabled to remove the coiled spring of a clothes-pin from the upper part of the larynx of a boy who was apparently suffocating, using his fingers to grasp the foreign body.

Dr. J. LEWIS SMITH mentioned the case of a child which swallowed part of a nut-shell, developed fibroid pneumonia, afterward coughed up the offending piece, and recovered completely.

Dr. W. M. CARPENTER remarked that it was an old method, in cases in which a foreign body had entered the air-passages, to take the patient by the ears and violently draw the head forward and upward, at the same time striking him on the back. He was under the impression that, at a previous meeting of the society, at which this subject was up for discussion, it was shown that, as a rule, it was safer to treat such cases on the expectant plan, as in most instances the foreign body would be expelled by a violent expiratory effort.

Tumor of the Breast.—Dr. W. P. NORTHRUP presented a specimen of tumor of the breast which had been removed by Dr. C. C. Lee from a woman forty-five years of age, the mother of ten children. A short time before the birth of the last child she noticed a small tumor of the breast, and when the tumor was removed, seven weeks after the birth of the child, it was of the size of an orange. It had given rise to some lancinating pain. The patient had been seen by five or six eminent surgeons of the city, all of whom pronounced the tumor malignant, and advised immediate extirpation. The tumor was very firm, and somewhat nodulated; the nipple was markedly retracted; there was no ulceration. As Dr. Lee cut down upon the tumor there gushed out a lot of foetid material, apparently pus, and all who were present thought he had cut into an abscess. The anterior aspect of the wall of the cavity was quite thin and ragged; the posterior was markedly indurated. The ragged walls were cut away, the wound was closed, and union took place almost throughout by first intention. There were a few enlarged axillary glands which were not removed, and which were now scarcely perceptible to the touch.

The specimen, which had been examined under the microscope by Dr. Northrup and Dr. Delafield, gave the impression that there had been an adenoma, and that afterward an abscess had formed within it. The case was rendered obscure by the fact that the adenomatous tissue was pervaded by inflammatory or granulation tissue. It contained numerous giant-cells. The prognosis was considered very doubtful.

The PRESIDENT had operated in a similar case about two years ago, the woman being forty years of age, and presenting a tumor answering in almost every respect to the description given by Dr. Northrup, except that there was no retraction of the nipple. The cyst-wall was so tense that when it was cut into the contents spurted a great distance. He also removed some axillary glands. He was then of the opinion that the prognosis was good, but he had since operated twice upon the same patient for enlarged glands in the neck, and she was now dying of suffocation from enlarged glands along the sterno-cleido-mastoid muscle, and from asthenia. He should regard the prognosis in Dr. Northrup's case as very serious. All the enlarged glands in the axilla should be removed in cases of amputation of the breast.

Dr. WYETH thought the giant-cells pointed to sarcoma or tubercle.

Ulcerative Endocarditis.—Dr. J. LEWIS SMITH presented a specimen from the case of a girl, aged five years, whose health immediately before the attack of which she died was good. Two years previously she had had double pneumonia, and two months before an attack of pertussis. She began to be sick the 16th of August last, with fever and loss of appetite. Pneumonia was suspected, but no definite signs developed. Dr. Smith saw the patient on the 25th of August, at which time the temperature in the groin was 104.5° F., the pulse 150, the tongue dry and furred, and the respiration moderately accelerated. The

urine and heart-sounds were normal. He was unable to make a clear diagnosis. On the 26th the patient had slept well during the night, had had two stools of normal appearance. Morning pulse 160, temperature in the groin 102.4°; in the evening she had an evacuation of dark blood. On the 27th the pulse was 160. She had had one normal evacuation from the bowels. On this day the patient began to vomit, and continued to vomit more or less every day until she died. The temperature varied on the same day from 105° to 101° F. There was also a daily variation in the pulse rate. On the 29th there was a passage of pure blood from the bowels. On the 4th of September the patient vomited blood. She died on the 5th, in a state of great prostration. There was no extravasation of blood under the skin until the last day of life. At the autopsy the mucous membrane of the stomach and intestine was found mottled by extravasation of blood. There were some points of extravasation of blood in the liver; none in the kidneys; also some in the lungs, and to a marked degree in the anterior and posterior lobes of the brain, part of the sulci being filled by extravasation of blood under the arachnoid. On the mitral valve there was a polypus three quarters of an inch long, which, according to microscopical examination by Dr. Northrup, contained numerous micrococci. The entire endocardium seemed to be much thickened. There were two other smaller polypi, covered with fibrin, attached to the heart-walls.

Leucocythemia.—Dr. COX mentioned two cases of abdominal tumor which had been diagnosed, the one to be an ovarian and the other a renal cyst, but examination of the blood had shown that the patients were suffering from leucocythemia, and they were thus spared an unnecessary abdominal section.

NEW YORK SURGICAL SOCIETY.

Meeting of October 14, 1884.

The President, Dr. ROBERT F. WEIR, in the chair.

Exsection of the Knee Joint.—Dr. L. A. STIMSON presented a patient upon whom he had performed exsection of the knee joint with an excellent result as regarded the form and function of the limb. The patient was a man, forty-five years of age, who entered Bellevue Hospital in April, 1884, complaining of the consequences of a suppurative arthritis with which he had been affected seven or eight years previously, the result of an unknown cause. Multiple incisions had been made on the front of the thigh just above the knee, through which pus had been evacuated. When the patient entered the hospital the joint was somewhat "springy," and whenever he made use of the limb for a day, or even for an hour or two, it would become so painful that he would be obliged to lie up for days and sometimes for weeks. The patella was immovable, the joint, as already stated, fixed but somewhat springy. The condition being looked upon as that of false or partial ankylosis, the operation of excision was proposed, and was performed on the 21st of April by making a straight incision across the front of the joint, as nearly as possible at the level of the articulation, with a liberating incision on each side, at the two ends of the transverse incision. After the soft parts were cut through, the knee was firmly flexed and the joint broken open, after which the pieces of bone were excised. That from the femur was about an inch in its greatest thickness, that from the tibia very thin. A second thin slice was removed from the femur to make the adjustment of the limb more accurate. The bones were then wired together on each side, and the incision was closed with a continuous catgut suture. Two short drainage-tubes were then inserted. Bichloride solution was used during the operation. The dressing consisted of iodoformed gauze, and was changed on the follow-

ing day, being saturated with blood. The limb was suspended in a posterior wire gutter in such a way that separation of the cut surfaces by sagging downward of the thigh and pelvis was avoided. The dressing was again changed on the 8th of May, a little more than two weeks after the first change was made, and the tubes were withdrawn. The wounds were found to be healed, except at the points of entrance of the drainage-tubes. The dressing was changed again on the 26th of May, the wires were removed, and the limb was put up in a plaster-of-Paris splint. It could now be observed that the direction of the limb was apparently perfect. There was no angular deviation, no rotation of the thigh outward and no turning of the foot inward, and the limp was not very marked.

In reply to a question, Dr. Stimson said there had been complete destruction of the articular cartilages, with roughening and partial union of the surfaces of bone.

THE PRESIDENT inquired whether any difficulty had been experienced in extracting the wires.

Dr. STIMSON replied that there had been none.

THE PRESIDENT said he had seen square nails employed for fixing the adjoining extremities of the femur and tibia in a number of instances, both in this country and abroad, and, so far as he had been able to observe, they worked admirably. The nails were extracted at the end of the third or fourth week, and without difficulty. He had seen a good deal of trouble attend the removal of wires. He asked Dr. Charles McBurney what methods he had employed for fixing the ends of the two bones together.

Dr. MCBURNEY replied that in the first cases in which he had operated he employed wires, but he had sometimes experienced a good deal of difficulty in extracting them, and in some cases had had to etherize the patient. In the last three cases in which he had operated he had tried to secure coaptation without the use of either wire or nails, and, though it was too early to report on the result in these cases, he believed that they would do well.

Dr. F. LANGE remarked that his experience with nails had been satisfactory.

Dr. STIMSON had reported one case to the society in which no wires had been employed, but the result was very unsatisfactory, the foot turning inward to a marked degree. The result was anticipated during recovery, because it was impossible to keep the patient straight in bed.

Dr. CHARLES T. POORE had frequently had difficulty in removing the wires, and in one case had left them in without any mishap.

Dr. ALFRED C. POST had once broken a wire off in attempting to remove it, in a case of ununited fracture of the radius, and the piece which remained in the bone had caused the patient but very little trouble.

An Inquiry into the Origin of the Use of the Ligature in the Treatment of Aneurysm.—Dr. STIMSON then read a paper with this title. [See page 477.]

Vascular Tumor of the Lip removed without Hæmorrhage by the Use of a Clamp.—Dr. POST presented a small specimen, which was of interest with reference to the manner in which it had been removed. It was a bleeding fungus, about 12 mm. in length, 9 mm. in breadth, and 7 mm. in thickness, which had grown from the posterior mucous surface of the upper lip near the median line. He had removed it without a medical assistant, hæmorrhage being prevented by the use of a large elliptical clamp upon the lip. The first suture was passed while the clamp was in position, but not tightened until after the clamp had been removed. But a few drops of blood were lost. The growth had not yet been examined with the microscope, but it was not believed to be malignant.

Recurring Carcinoma of the Arm; Capillary Drainage.

—Dr. THOMAS M. MARKOE presented an arm, the seat of secondary cancer. It had been removed from a lady past middle life, eighteen months after the removal of the breast, which had been done by a physician in Burlington, Vt. The tumor of the breast was probably carcinomatous. The patient remained well after amputation of the breast for about a year, and then began to complain of a great deal of pain in the left humerus. There was no special tumor of the humerus at any time, but there was increasing tenderness, and, after the lapse of a few weeks, the bone became flexible and could be bent at almost a right angle. The patient came to the city, and Dr. Markoe removed the arm at the shoulder joint by the ordinary operation, making a long deltoid and rather a short axillary flap. The healing of the wound was rapid and extremely satisfactory. The bone was found to be entirely flexible, due to a series of breaks at various points. Just below the neck there was a distinct fracture, which had been appreciated before the operation.

Dr. FERGUSON had made the following report upon the specimen: "The soft parts being partially removed, the left humerus is seen extensively involved by a new formation. There are two false points of motion—one just below the insertion of the deltoid, and another in the surgical neck. Tumor-tissue is seen distinctly in these locations at the expense of the bone. The muscles covering the front of the arm were in part invaded by the tumor, which in its invasion of healthy tissues followed the planes of the fibrous tissue between the muscle-bundles. Microscopically, it is a typical carcinoma."

Dr. MARKOE said he had presented this case more especially to have an opportunity to say a word about a method of managing surgical wounds which had given him great satisfaction, and which he believed had not been so extensively recognized as it deserved to be. Surgeons had for years used capillary drains in the shape of horse-hair, in the olden times silk, and more recently the catgut leash, yet he believed that very few surgeons had much confidence in the method for large wounds, as it had been used commonly for small ones, and particularly for those of the scalp—a single thread or two of catgut being placed in the wound as a drain, the wounds thus treated doing extremely well. But a good many surgeons abroad, and some here, had used the method in the treatment of larger wounds, and had found it satisfactory. He had himself felt that the method had certain advantages which were worthy of attention. In the first place, it exerted a positive force in drawing out from the cavity of the wound any fluids which might be retained there. If the drain was in a dependent position, the capillary force exerted by the leash would be almost as powerful as that of a siphon. The moment it was applied it would be seen that drainage commenced, taking place along the sides and between the strands of catgut. The other features of the dressing perhaps presented nothing unusual, careful apposition being very important. Iodoform and bichloride gauze with borated cotton externally completed the dressing. Dr. Markoe then related some cases showing the advantages possessed by this form of drainage.

On June 18th he extirpated a recurrent tumor of the breast which had been removed about a year before. The axillary glands were very extensively involved, and this rendered free evacuation of that region necessary—so free that the sterno-clavicular articulation was felt with the finger during the operation. The wound was a very large one, and was drained with two capillary drains, each composed of six or eight strands, tied in the middle, the knot being then thrust into the deeper part of the wound. The double leash of threads projected from the wound about an inch. One of these drains was placed in the lower and the other in the upper angle of the wound. The

wound was brought together with catgut stitches dressed with iodoform and bichloride gauze, and covered over with cotton. The dressing was left on fourteen days, at the end of which time the wound was found to be perfectly healed from end to end. The finger, passed over the line of union, rubbed away the projecting strands of the drains and the unbared parts of the sutures. Not a drop of pus had formed, and the wound was so absolutely and soundly healed that no further dressing was applied.

On September 23d he operated in another case for relapsing cancer of the breast, making a smaller wound and not opening the axilla, but applying the same kind of dressing. On the ninth day the wound was found to have healed perfectly.

September 24th he removed a cancerous breast of moderate size, in which a few of the axillary glands were involved, making a long incision necessary for their complete removal. The capillary drains were inserted, and on October 9th, the fifteenth day, when the dressing was removed for the first time, the wound was found to be completely healed without any formation of pus.

On the 25th of September he removed at the shoulder joint the arm which had been shown to-night. Two catgut drains were used, with the usual dressing. The gentleman under whose charge the patient was removed the dressing a little early—only thirteen days after the operation. In that case the wound was found to have healed perfectly except a little strip at one angle, at which there had not been perfect coaptation of the flaps. The wound, however, was very superficial, and, doubtless, would heal under another dressing.

On October 12th he performed another breast amputation, applying a similar dressing, and the wound had now completely healed except at one point, at which a clot of blood had rested between the lips of the wound.

He made these statements because, so far as his experience with this method had extended, it had led him to have the greatest confidence in it, and, while he did not maintain that it was applicable to all wounds, yet in those cases in which it was possible to obtain primary union he believed it to be better than any other form of drainage. The ordinary India-rubber drainage-tube certainly always left a fistula. Neuber's tube, while it often acted well, securing perfect healing of the wound nearly throughout, still left one point open, and sometimes acted as a foreign body.

Dr. STIMSON inquired what kind of antiseptics had been employed.

Dr. MARKOE replied, The bichloride solution, and iodoform to the wound surface. The drainage-tubes were prepared in oil of juniper, after Kocher's method.

Dr. JAMES L. LITTLE had had considerable experience with this form of drainage, applying the strands of catgut in the manner described by Dr. Markoe, and it had given entire satisfaction. He had not used it extensively in large wounds.

The PRESIDENT had used the capillary drains, both of hair and of catgut, and, so long as the wound was fresh and the discharge serous, the capillary action had done well; but, so soon as the secretions became thick, it had not worked; the strands became glued together and the capillary action ceased. He knew this to have been the experience of many other surgeons also. He had employed the method in large wounds, as in breast amputations, and certainly had not been so well satisfied with it as with the rubber or bone drain. He wished to state, but not too positively, that he had some doubts even in regard to the bone drainage-tube. In one case recently in which the bone drainage-tube was employed, a septic condition developed, and he was strongly of the impression that it was due to the absorption of the softened bone. This was not a single instance,

and from such cases he had learned to place more reliance upon the rubber drainage-tube than upon any other, although he recognized its great disadvantage in having to be removed from four to seven days after the operation, but by this time the risk of inflammatory reaction had pretty well passed. At any rate, he had not found any material risk to the patient from changing the dressing at that time and putting on the permanent one.

Dr. WILLIAM S. HALSTED thought that it would be difficult in a given case to know just what to attribute a bad result to, with the imperfect antiseptic technique at present existing even in our best New York hospitals. Trained nurses, with long sleeves and hands uninspected, were allowed to pass and hold dry sponges. He had repeatedly observed ligatures handed to the operator from the mouth of the interne, and seldom failed to find instruments, especially artery-clamps, which had been insufficiently cleaned. He observed further that in some of the hospitals the preparation of the catgut was intrusted to the apothecary, and, even if it was prepared by the interne, it would not be a guarantee that it was properly, even if conscientiously, done.

The PRESIDENT said that we all recognized that there were numerous sources of septic infection, and to these he had directed special attention in a paper read last year. He now only spoke of the possible risk of infection from the bone drain, because it was subject to animal decomposition. The early ones, kept in carbolic oil, softened notably in a few months—sustaining the view of the non-aseptic condition of the oil. Lately the bone drains had been kept in alcohol, pure or mixed with bichloride of mercury. These were harder and lasted longer.

Dr. MARKOE said his object was to secure union without any suppuration, and, if the catgut drainage did not prevent it, we were still in the same position as if the rubber tube had been employed, and the permanent dressing might be applied in the same way. But he believed that the capillary drain gave a much better chance for primary union, and it was very desirable, if possible, to secure that result.

Dr. HENRY B. SANDS thought the cases reported by Dr. Markoe afforded a striking illustration of the advantages of a dressing which offered no obstacle to union by first intention. He believed that, had the rubber drain been employed, the excellent results reported could not have been obtained. There certainly would have remained for a time a granulating, if not a suppurating, tract along the course of the drainage-tube. He should say that, if it was probable that a wound would heal only by granulation, it would be desirable to use a rubber drain, but, if the case was one in which primary union might be anticipated, a soluble drain would be preferable. He did not feel quite certain as to the capillary action of the catgut drain. According to his experience, after it had been in place a short time, it became quite soft, the separate strands became agglutinated to one another, and capillary action was diminished or arrested. Regarding the comparative value of this and the decalcified-bone drainage-tube, he doubted whether the former possessed any superiority. He had obtained absolutely perfect primary union in amputation of the breast in a number of cases in which he had employed the decalcified-bone drain. He did not believe, however, that union without suppuration could be accomplished unless great pains were taken to secure perfect coaptation, not only of the edges, but also of the deeper surfaces of the wound. He should not expect to get union with any form of drainage, however perfect, if the surfaces of the wound were not in perfect contact.

Dr. LITTLE had operated in a case of cancer of the breast on Saturday morning. Four days previously, and this morning, the temperature being markedly elevated, he removed the dress-

ing, and found that the drainage had been imperfect, owing to the fact that the bone drainage-tube had collapsed and become occluded. He had known this accident occur in several cases after the use of the bone brain. He inquired of the president whether the preparation of the tube had anything to do with its remaining patent.

The PRESIDENT had found that tubes prepared after the manner recommended by Neuber, in carbolized oil, were fragile; a needle passed through the end of them would cause them to split, and by the third or fourth day they would sometimes be found collapsed, and would fail to act as drains. If kept in glycerin and alcohol, after Kocher's method, they would not split, and were more readily soluble; the ends would be found almost wholly absorbed within three or four days. If put in bichloride solution and alcohol, they lasted as long as from five to seven days.

Dr. SANDS said the bone drainage-tubes which he employed were prepared according to a method suggested by the apothecary of the Roosevelt Hospital. The oil was extracted by means of chloroform, and the tubes were afterward kept in alcohol. They were firm, and did not collapse so readily as when kept in carbolized oil.

Two Drainage-Tubes in the Pleural Cavity Eighteen Months.—Dr. LITTLE presented two rubber drainage-tubes, three eighths of an inch in diameter—one eleven and a half inches, and the other nine inches in length—which he had removed from the pleural cavity of a man the day before. The patient was thirty years of age, and was operated upon in April, 1883, by Dr. Burchard, for empyema of the left side. An incision about two inches in length was made through the eighth intercostal space, and eleven quarts of pus were evacuated. The drainage-tubes were then introduced, and the extremities made fast by ligatures fastened to strips of adhesive plaster. The next day it was found that the adhesive plaster had become softened by the discharges, and the tubes had disappeared. The surgeon in attendance searched for nearly two hours without finding them. A consultation was held the next day, and it was decided that, as the patient was doing well and the cavity was so large, it was best not to make further search until the cavity had contracted. Two months afterward the patient passed from under the doctor's care. When he presented himself to Dr. Little, eighteen months after the first operation, the daily discharge of pus from the wound was seven or eight ounces. On introducing the probe, it was thought it came in contact with a tube. About an inch of the ninth rib was excised, and the drainage-tubes were removed with the forceps without difficulty. The question naturally arose, What was the best way to fix the tubes? Dr. Little had been of the impression that it consisted in passing a safety-pin through the end of the tube, but at the operation in this case a physician told him he had once had the pin cut through and the tube fall into the pleural cavity. Fortunately, however, he was able to pick it out with the forceps.

Dr. MARKOE remarked that the system of through-drainage which he employed offered a certain amount of security against the tube escaping into the pleural cavity: at any rate, the accident had never occurred in any of his cases.

Dr. STIMSON, in reply to a question by the president, said he had once had occasion to remove a drainage-tube about one inch long from the pleural cavity, into which it had slipped after the breaking of the string by which it was secured. He removed a portion of one rib and seized the tube with a long forceps.

Dr. LITTLE referred to the manner of avoiding hemorrhage from the intercostal artery in this operation by adopting the procedure recommended by Dr. Abbe. He exposed the rib and cut it away with the bone-forceps. He then passed a double

ligature with an aneurysm-needle behind the rib, including the vessel, periosteum, and pleura, tied in two places, and cut between, thus avoiding all hemorrhage.

Dr. HALSTED had been surprised to see how little the intercostal arteries bled in cases of empyema of long duration. He had within a few months performed two extensive thoracoplasty operations. In the one case large portions of six, and in the other of eight, ribs were removed as well as the subjacent parietal pleura, and, to the best of his recollection, he had found it necessary to ligate but one intercostal artery.

Dr. MARKOE did not believe the costal artery was wounded in this operation, but thought it was pushed aside and left in contact with the pleura.

The PRESIDENT referred to a case in which the drainage-tube escaped into the pleural cavity, and he was enabled to remove it by enlarging the original incision.

Dr. SANDS had been enabled to prevent escape of the drainage-tube into the pleural cavity by making use of a tube with a flange, like the ordinary tracheotomy-tube. The short tube fulfilled all indications, and could be used without danger.

Dr. LITTLE said it had been suggested to divide the end of the tube into slips, then sew on strips of rubber cloth, and tie around the body, as described by Dr. Pilcher in his book on "The Treatment of Wounds."

Dr. CHARLES K. BRIDGON believed the tube entered the cavity by the act of inspiration. Frankel had recommended a metallic tube with a flange, but longer than the one employed by Dr. Sands. A double tube had been recommended—one for pumping in liquid, the other to allow it to escape.

Hysterectomy for Multiple Fibromata.—Dr. STIMSON presented a uterus with its appendages, which he had removed by abdominal section from a woman, forty-five years of age, for multiple fibromata. The mass, which was about six inches in diameter, was raised, the cervix transected with an ivory pin carrying a double elastic ligature, and each ligature was made to embrace half of the cervix and the corresponding broad ligament. The mass was then cut off above. There was no hemorrhage. The pedicle was treated by the extra-peritoneal method. The patient made a good recovery. Dr. Stimson had done a similar operation in a case reported to the society at its last meeting in May of this year, the patient making a good recovery.

Dr. LANGE said that he had taken the precaution, before applying the elastic ligature to the pedicle, to constrict the parts with the écarosse lest the ligature might fail to compress the thick mass sufficiently to prevent hemorrhage. He had always adopted the intra-peritoneal method of treating the pedicle, securing the ligature with a lead ring, cutting the tumor off immediately above it, and he had not found any trouble from the presence of the clamp or ligature in the abdominal cavity. Only a few days ago he had removed the uterus for a large myoma, after this method, in a case in which he had originally intended to do simply Tait's operation on account of the low condition of the patient, but, being unable to get at the second ovary, he removed the whole mass, and the patient was now doing very well.

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

Meeting of September 16, 1884.

The President, Dr. J. A. MCCORKLE, in the chair;

Dr. Z. T. EMERY, Secretary.

Antiseptics in Midwifery.—Dr. CHARLES JEWETT read a paper with this title. [See page 481.]

Normal Parturition always Physiological was the title of a paper read by Dr. ERNEST PALMER. [See page 483.]

Injuries to the Pelvic Floor.—Dr. ALEXANDER J. C. SKENE read a paper on this subject. [Dr. Skene's paper will be published in a subsequent issue of the journal.]

Dr. WIGHT hesitated to appear in the debate under the circumstances, as he did not profess to be an obstetrician. Yet he might be permitted to say something in regard to the subject of antiseptics, or what related to it, perhaps. He thought we might put above all other propositions this: That antiseptics was a work in itself, *per se*, to be done; and, having come to that point, we should find it expedient to make another remark; and that was, that we might find all these gentlemen differing in the plan which they adopted in carrying out the work of antiseptics. He had so often been heard upon this subject that he would not reiterate what he had said over and over again, but he would make a statement at the outset in that respect. He desired to say a word or two with reference to the kind of antiseptic work which he had practiced in reference to cases of midwifery. He had attended a few cases in his career, which had covered several years, and he wished to say that he had never lost a patient by puerperal fever. He had seen patients who had had it, and been attended by midwives, who had died, but none of his patients had died. He did lose a puerperal patient once, but that was the result of neglect on the part of her husband. He would not or did not provide for her fire or food. He killed her instead of the doctor. The doctor could not save the patient. She died from shock—not from puerperal sepsis. He had never used the vaginal douche at any time upon puerperal patients. He attended these cases some years ago—ten or fifteen a month—but not many now. After the patient had been confined, he kept her scrupulously clean. He used alcohol and water as a wash, externally, but never used an internal vaginal application. More than that, as soon as his patient was confined he gave her a good large milk-punch, as she was in an exhausted condition, and it did her good, always. It was said such measures ought not to be practiced; he did it nevertheless. Then he gave her five grains of quinine in the morning and five grains in the evening. He fed her liberally, and she did well. He never deviated from that practice, and never would so long as it carried him through safely, and nothing had delighted him more than to listen to the sentiments expressed in the papers which had been read. In 1870 he attended a patient in her second confinement. He had also attended her in her first confinement. Her oldest child was born about twenty months before the second. She was confined in a small room. About twenty hours after confinement the oldest child broke out with malignant scarlet fever, and in about thirty hours more it died. This woman got out of her bed, went to the carriage, in the rain and hail and snow, walked to the grave, stood upon the ground a half-hour, returned home, and went to bed; and she did the best of any confinement patient he ever had. In the spring of 1884 he attended a woman who had an ordinary normal labor, although a pretty severe one. Her oldest child, about six years of age, had a severe attack of scarlet fever. The day after she was confined the boy was put in the same room with the mother. He had a temperature of 105°, but there was no rise of temperature in the mother from the beginning to the end of her sickness. He mentioned these cases as a curiosity, for he had been taught that scarlet fever would produce puerperal fever if brought near a woman while in the puerperal condition.

Dr. OTTERSON spoke of the necessity of cleanliness as a preventive of the necessity of using antiseptics. He did not recollect more than eight or nine cases of puerperal fever in his experience in more than three thousand confinements. Some of these cases could not be traced to any special cause. One could be traced directly to shock; another was brought on by

a violent fit of temper, followed by delirium and exposure, with fatal results. All the other cases of which he had any recollection occurred without any special known cause. Only five cases in his practice had been fatal, and one case he could trace directly to a septic condition. He would disinfect the rooms and surroundings of patients, and be more careful to prevent its necessity. Much might be conveyed by the old saying, "meddlesome midwifery is bad."

Dr. THAYER said his obstetric practice was not sufficiently large to make it worth while to relate his experience. During the last eight or ten years he had always used the vaginal douche during the continuance of the lochia without having produced any ill effects that he was aware of. Some of the papers read before the Academy of Medicine within the last year made it appear that cases have done better without the use of this measure, and he had noticed that Dr. Thomas had concluded to restrict the use of it in future. The speaker was inclined to follow the same course. He was brought up with the same feeling that Dr. Otterson had expressed—that meddlesome midwifery was bad, that the process was a physiological one, and the best plan was to trust entirely to nature, unless there was occasion for interference. His practice had been to follow this plan, with the single exception which had been mentioned, of using the carbolic-acid or boric-acid solution after labor. He had never lost a patient from puerperal fever. He once lost a patient after craniotomy within three or four days after confinement, but he had had no severe cases of puerperal fever. He was of the opinion that the tendency to follow out these extreme measures of practice by specialists should be restrained. He believed most heartily in the young men of the profession. He went to them for advice. He believed in the constant advancement of science; and yet he believed, also, that some specialists were pushing measures beyond their legitimate bounds. He thought the remarks here to-night of a precautionary character were very desirable and appropriate.

Dr. WALLACE had records of over seventeen hundred cases of confinement. Among these there had been four cases of puerperal fever, none of which proved fatal. In only one of these was a vaginal injection used. He had never practiced the use of antiseptics in obstetrics, as he had never found the necessity for anything of the kind.

Dr. WALKER asked Dr. Jewett whether this plan of using iodoform was one which had been devised by himself, and whether he had come to the conclusion that the use of iodoform and the other materials which he had mentioned had done any good or harm.

Dr. JEWETT replied that the use of iodoform was not original with himself. It had been used more or less in obstetric practice for several years. While he thought injections very capable of doing mischief, especially in the hands of the average nurse, he had no reason to think they had done harm in his hospital practice. The point he wished to make was, that in his experience they had failed of their mission.

Dr. SKENE remarked that the subject under discussion was certainly one of very great interest, because of the fatal character of puerperal fever and because of the question of preventability. There was also another source of interest in the fact that there was so little known about it positively. Certainly there had been much discussion on the subject in recent days, and yet, throughout it all, there was a great lack of anything like definite knowledge in that which had been said and written. It was true that we had positive statements in relation thereto, but they were not all sustained by positive knowledge. Opinions might be stated very positively without being based upon any very good ground, hence he was disposed to look for facts rather than propound theories. It seemed to him that the all-

important question brought up by the papers read was, had we, in the various forms of childbed fever, any more than puerperal septicæmia? He had always believed that we had an undoubted puerperal septicæmia, but he also believed that there was a puerperal fever characterized by peritonitis, etc., which was not a simple surgical septicæmia. There had been a tendency lately to overthrow that doctrine, but he was as firm in that belief as ever—not because he could prove his position, but because the facts had not been all accounted for by those who doubted it. He believed that puerperal septicæmia was largely preventable, and hence he indorsed anything and everything that could be done in the way of preventing it by care, cleanliness, and antiseptics. Then the question as to the management of septicæmia after it was established arose. We had been led to believe that, if due care was taken to prevent it, little danger of getting it need be apprehended, and, if it was established, it was in many cases easily controlled, and yet we saw how absolutely the most approved means failed to arrest the disease in many cases recorded in the paper just read. Certainly, so far as his experience went, it showed the same thing—that all known means employed to control puerperal septicæmia would fail in a great number of cases, while in a lesser number the treatment was efficient. This difference in the efficacy of treatment might be due to the fact that there were two forms of septicæmia—i. e., the disease behaved in two different ways. In the one form the general system was repeatedly or continuously poisoned by absorption from a dépôt in the genital tract where suppuration or decomposition was going on. If the point of supply could be reached and thoroughly cleansed and kept clean, the general septicæmia disappeared at once. In the other form the system became poisoned, apparently from a like source, but the septicæmia continued, and sometimes grew in violence after all local trouble had been removed. In the worst case of puerperal septicæmia that he had ever seen end in recovery the patient had at times a temperature of 105°, while the pelvic organs were all perfectly normal, no trace of disease or injury being found. One variety was controlled easily if we could reach the original point of infectious supply. The other seemed to be wholly beyond the control of the obstetrician. A celebrated surgeon had said he did not know what to do with septicæmia. He knew many things to do to prevent it, but, when once established, he did not know anything that had any influence in curing it. Such a statement would apply undoubtedly to the latter form of septicæmia. He believed that there was something else than septicæmia in some puerperal fevers. He thought we had a puerperal fever, characterized usually by peritonitis, which was due to zymotic causes, and was related more closely to the zymotic class of diseases than to septicæmia of traumatic origin.

This zymotic form of fever had a clinical history more closely related to diphtheria and scarlatina than to ordinary surgical septicæmia. If this idea was correct regarding the existence of a zymotic infectious puerperal fever, then it was possible that the popular views of antiseptic means of prevention and treatment were not in advance of the older way, which was for the doctor who found himself in an epidemic of puerperal fever to retire from obstetric practice for a time. At any rate, it was unsafe to rest secure (with our present knowledge) upon the power of disinfectants. They might and did guard against septicæmia, but they were not a safeguard against all infection. We were still in need of more facts regarding the infection and contagion of puerperal fever and the boundary-line between these two forms of septicæmia before we could definitely formulate our ideas regarding their prevention and treatment. He was satisfied practically that it was dangerous, or at least useless, to interfere with the patient immediately before and

after parturition if there was no apparent trouble. He would say it was better to let well enough alone. So long as the patient was doing well, she should be let alone, so far as local treatment was concerned; but, so soon as she manifested any evidence of disturbance, it was always deemed wise to ascertain if there were any local causes, such as any accumulated foreign decomposing or festering substance in any part of the genital tract, and it should be removed. The question yet remained in a somewhat unsettled state as to how far we could prevent septic trouble. Of course, a great deal could be done by way of cleanliness on the part of the obstetrician and nurse or attendants; but how far we could control atmospheric influences was not yet clearly pointed out. We had a great field for investigation in that line. If we rested assured that we could control septicæmia with our present knowledge of the subject without further investigation, we were simply stumbling-blocks in our own way, and in the way of the welfare of our patients. The two papers just read were evidences of work in the right direction. They gave carefully made clinical observations and the facts obtained thereby—just what was needed. These facts appeared to be slightly opposed to some of the theories in vogue. So far as that was the case, we were nearer to the solution of the problem. In the past, theories had been made first, and the facts made to fit them; at the present time we found out facts and made our theories out of them.

THE NATIONAL CONFERENCE OF STATE BOARDS OF HEALTH.

First Annual Meeting, held in St. Louis, Monday and Tuesday, October 13 and 14, 1884.

Monday's Proceedings.

Mr. ERASTUS BROOKS, of New York, in the chair.

The Chairman's Introductory Remarks.—After calling the meeting to order, in Liederkranz Hall, the CHAIRMAN congratulated those present on the good attendance, which intimated that a proper interest in health questions was felt in the several bodies they represented. It would be idle words were he to repeat what had been said in the past with regard to the importance of organizing State boards of health. He was glad to know that in nearly every State there were such boards, and that the few States which were unrepresented at the present time were sufficient promise that there was a future with regard to that great question which would find every State and territory fully organized. In his own State, he was happy to say, local organizations have been completed in 900 towns, in nearly every one of the 240 villages, and in 24 cities. What had been accomplished they had been enabled to do rather by persuasion than by force or coercion, since the State gave them unlimited power to establish organizations in the various towns and villages.

A Proposed Plan of Organization.—The minutes of the preliminary meeting, held in Washington, May 7th, having been read by the Secretary, Dr. J. N. McCormick, and accepted, Dr. HEWITT, of Red Wing, Minn., presented a plan of organization, in behalf of the State of Minnesota. The main points were as follows: The establishment of a body to be known as the Council of State Boards of Health of the United States, the officers to consist of a chairman, a corresponding secretary, a recording secretary, a treasurer, and an executive committee, the latter to consist of one member from each State board. The objects of the organization were to be, to cultivate a closer acquaintance between officers and members, to facilitate discussions of sanitary work, and to give better opportunities for comparing and discussing methods.

On motion, the matter was referred to a committee consisting of the chairman, the secretary, and Dr. Rauch, Dr. Hunt, and Dr. Hewitt.

A Communication from the American Public Health Association was received, inviting the members of the conference to attend the meeting of the association, and to read papers. The invitation was accepted with thanks, but the feeling was very generally expressed that the work of the two bodies should be kept distinct. Dr. RAUCH said he proposed to deal with the men who were to give orders when the cholera came, and not with those who would only hold "sanitary prayer-meetings."

State Rights and Sanitation.—Dr. J. H. RAUCH, of Springfield, Ill., read a well-written argument on the cholera question, in which he discussed the efficacy of quarantine and the rights of a State to preserve its own territory free from contagion. Illinois was vitally interested in the manner in which quarantine was enforced in New York and Eastern ports. His experience in cholera epidemics had convinced him that cholera was conveyed only by means of infected persons, and hence there was no necessity for guarding against merchandise, rags, etc. The Illinois State Board of Health would have the right to close up the Illinois end of the St. Louis bridge if the great city became plague-stricken. The State would also have the right to stop the Great Canada Southern railroad from entering the State territory if the authorities thought Canada was afflicted with cholera. The same could be done on all lines, and all States had the same power—it was a mere question of assertion. For a period of six years sanitary officers and sanitary authorities have had no great demand made upon them. During these six years the interest in sanitary matters raised by the epidemic of 1878—the yellow fever epidemic—had gradually diminished and had been displaced by other matters of interest. When an epidemic actually existed and industry and commerce were paralyzed, there was no question in the public mind as to the desirability of sanitation, no hesitancy in making appropriations. But Rabelais had told us, nearly four hundred years ago, what the devil did when he got well. The Forty-eighth Congress adjourned in spite of the fact that an epidemic was staring us in the face, after rendering inoperative all previous legislation on sanitary matters. It was now our imperative duty as sanitary officers to awaken public interest and to prevent the introduction of the epidemic of Asia to our shores. Much had already been done by the action of national and State authorities, and since the second of July last over sixteen States have issued circulars of admonition.

Congress should be urged to reorganize and rehabilitate the National Board of Health, or to provide an efficient substitute—one clothed with increased power and supplied with ample funds to maintain an effective system of modern sanitary quarantine for the exterior; to maintain an interior sanitary inspection service for the great highways of travel by rail and river; and to give judicious co-operation and substantial assistance to States and municipalities in preventing the introduction of epidemic diseases into one State from another, and their spread within the States themselves. Congress should give the President the power to issue a proclamation upon the recommendation of the national health authority, forbidding immigration into the United States from infected districts; and it should provide some method of international sanitary co-operation between this country and the Dominion of Canada, whose interests were substantially the same as ours in these matters, and whose contiguity made co-operation of vital importance. In States which now had no boards of health, or whose boards were not provided with adequate resources, the people should be awakened to the necessities of the situation. Legislators should be thoroughly informed as to the facts, and urged to provide suitable legislation. Informa-

tion on sanitary matters should be widely diffused to this end, and also to the end that, if an epidemic should come, we might not have to encounter the obstacles which ignorance was always ready to put in the way of what it did not understand. Happily, in this country, we were not likely to meet with the treatment that the superstitious peasantry of France and the lazzaroni of Italy had accorded their physicians and health officers. But sanitary education and knowledge could not be too widespread. He would suggest that when this meeting adjourn it should adjourn to meet again in Washington in December for the purpose of conferring with the President, the cabinet officers, and the committees of the Senate and House, as to the legislation which should be asked for at the next session of Congress. To this meeting not only should representatives of State boards of health be invited, but also all quarantine officers and health authorities of all the large cities, as well as those of the Dominion of Canada.

The National Board of Health.—Dr. CHARLES SMART, of the army, read a paper outlining the method of disinfection and quarantine used by the national board. The board based its rules and regulations to prevent the introduction of cholera into the United States and its spread from one State to another upon certain incontrovertible facts demonstrated by science and experience. Cholera was caused by a specific germ, and this germ could be destroyed with no other interruption to travel and traffic than was needful to discover its presence and apply the necessary means for disinfection. In order to secure international co-operation a conference had been held, and, of twenty-seven nationalities represented, the larger number were prepared to enter into a joint treaty that would secure harmony of action. The first step taken by the national board was to frame rules and regulations to be enforced at foreign ports to secure the best sanitary condition of vessels about to leave for a port of the United States. Ships were the great carriers and propagators of diseases of foreign origin, and the modern emigrant ship was a vast field for the cultivation of pestilence. Sanitary service at sea, for securing at the foreign port a clean vessel and uninfected freight, had also commanded the attention of the board. On the arrival of vessels at any port of the United States, proper steps were laid down by the board for the prevention of the entry of any infected material. Every vessel was visited by the quarantine officers, and all needful precautions were taken in case of suspicion of pestilence; clothing, baggage, and cargo were carefully disinfected. If, in spite of all these precautions, the disease effected an entrance into any port, measures were taken to prevent its spreading from that port to other ports on the coast, or to interior points. Seacoast, river, and railroad travel, and transportation were conducted under sanitary supervision. In the case of coast or river steamboats or vessels sailing from the infected port, measures of inspection and disinfection were enforced similar to those practiced with regard to vessels from foreign infected ports. In addition to this, inspection-stations were established at certain points on the Mississippi River, the medical officers of which acted as quarantine officers for the States threatened with invasion. The reader mentioned some additional recommendations for the establishment of a more rigid local quarantine.

Dr. BAKER, of Lansing, Mich., then moved that all papers read be referred to a special committee of five for consideration. The motion prevailed, and the chair appointed as such committee Dr. Baker, Dr. Rauch, Dr. Walcott, Dr. Bryce, and Dr. Herrick.

The CHAIRMAN opened the discussion on the two papers with a warm defense of the sanitary officers of the State of New York. So far as was possible, they had done everything to pre-

vent the introduction of cholera into the country by way of New York, and what they had done had been well done. Indeed, their arrangements were so complete that, in his opinion, it was almost impossible for the disease to effect an entrance into New York.

The papers were further discussed by Dr. J. B. LINDSLEY, of Nashville, Tenn., and Dr. C. W. GOVERTON, of the Dominion of Canada.

Tuesday's Proceedings.

Can Epidemics be excluded by Sanitary Cordons?—This was the title of a paper read by Dr. C. W. CHANCELLOR, of Baltimore. He desired to present a few facts in regard to the spread of cholera, with a view of arriving at some conclusion in regard to its prevention. He dwelt upon the folly of maintaining a system of quarantine while strictly sanitary measures were neglected. The quarantine theory demanded the exclusion of the germ of the disease, and quarantine was utterly useless to effect this, and always injurious, not only to commerce, but by inducing a condition of the public mind such as the panic recently witnessed in the south of France and Italy. Sanitary cordons failed to exclude cholera in 1823 at Moscow, Berlin, Vienna, Hamburg, Paris, Cairo, and Alexandria. It had been shown by reference to the outbreak of cholera in those places that the disease first appeared in places where the atmosphere was in a vitiated condition, and that the contagion was not communicated from other infected cities. While the promised restriction of cholera by quarantine had never been secured, the interference of governments—municipal, State, and national—could be exerted in such a manner as to disarm the disease of much of its malignity and prevent its extensive spread among us. This might be done by establishing at home, and without delay, an enlightened system of sanitary police; by taking effective measures to insure the cleanliness and proper ventilation of our cities and their suburbs; by impressing upon every class the importance of temperance, and especially of abstinence from every species of unwholesome food or intoxicating drinks, and withal by endeavoring continually, instead of exciting unnecessary alarm, to tranquilize and strengthen the public mind and to inspire confidence in all classes of citizens.

It was voted to hold the next meeting of the conference in Washington, on the second Tuesday in December.

AMERICAN PUBLIC HEALTH ASSOCIATION.

Twelfth Annual Meeting, held in St. Louis, Tuesday, Wednesday, Thursday, and Friday, October 14, 15, 16, and 17, 1884.

The President, Dr. ALBERT L. GIBSON, of the navy, in the chair.

Tuesday's Proceedings.

A Plan of Permanent Organization was reported by Dr. CHARLES SMART, of the army, on behalf of the Sub-committee on Incorporation. The plan was to organize under the laws of the District of Columbia, which required that twelve of the members should reside in the District. It was voted to adopt the plan recommended in the report.

The Squalid Dwellings of the Poor; a Social and Sanitary Reproach.—After the transaction of some routine business, including the election of a large number of new members, Dr. CHARLES W. CHANCELLOR, of Baltimore, read a paper with this title. He had selected the subject on account of its transcendent importance at this time, and he proposed to discuss it from both a social and a sanitary point of view. If investigation should be carried on and a report made on the dwellings of the poor in our cities, it would reveal fearful degradation and vice. Public inquiry would reveal places where decency was a

physical impossibility, and where men, women, and children were schooled in vice. At times whole streets were blockaded against the police. Over Saturday and Sunday the inhabitants of these rookeries gave themselves up to debaucheries of all kinds. If we turned our eyes to the difficulties in our own country, we were at once impressed with the melancholy conviction how little had yet been done to improve the human race. The poorest individuals were the most intemperate, but there was really no *a priori* cause why the poor should be addicted to drink unless it was the sense of their own misery. There were two primary and fundamental considerations upon which a nation must depend: First, health; second, education. Therefore, let no government be without a health department, presided over by health officers whose duty it should be to enforce wise laws. A nation such as ours, of fifty-five millions, with vast manufacturing industries, and a great commerce to attract the attention of our people, could not afford to waste the lives of its citizens. Disease paralyzed labor and wasted capital; it should, therefore, be the primary object of a humane government to prevent disease. Never before was the misery of the poor man more pressing or his daily life more degraded than at the present time; and here was a boundless field for philanthropists. The streets and alleys of our crowded cities furnished examples of squalid misery which were the disgrace of our civilization. It was here that the fevers were to be found that caused the deaths that figured so largely in official reports. Here people were absolutely ravaged by fever, living and dying amid terrible squalor. The atmosphere was foul in the extreme, and, unless one had a strong stomach, it was difficult to remain in the houses over a minute. Landlords, when their property was declared a nuisance and condemned, exacted from the cities an exorbitant value for the condemned property. The remedy for all these evils lay in the proper enforcement of rigid sanitary laws.

The Hygiene of the Habitations of the Poor was the title of the next paper, read by Major SAMUEL A. ROBINSON, of Washington, who depicted the errors of the construction of the habitations of the poor—errors that had been the fruitful cause of many diseases. But improvements should not be made at the expense of the poor, nor should they be forced to stand the cost of untried innovations. The reader showed how drains could best be used, and discussed the general negligence displayed by the poor of all cities in carrying off the refuse and garbage. It was a mistake to make the poor pay for the removal of this offal, as they often adopted all kinds of tricks to escape the necessity of undergoing this expense. Houses that were unwholesome should be torn down, and experience taught us that where this had been done new and good houses had been erected in their place. Model houses were those which were light, airy, and clean, and had facilities for the removal of refuse, and until we had such houses the schoolmaster and minister would labor in vain, for degradation and disease produced crime. It was a good home that made a good man.

The Sanitary Survey of a House.—A paper with this title, by Dr. WILLIAM K. NEWTON, of Paterson, N. J., was a narration of the method in vogue in that city for the determination of the relative sanitary qualities of any house. Health officers were given blanks on which certain questions and directions were printed, giving the necessary qualifications of a perfect house. The degree of sanitary excellence was made up from the reports of officers, who crossed off the qualities a building did not possess, and allowed those it did to remain. The first thing to be considered was the street on which the house was situated. Was it made allowing a free current of air to circulate, or narrow; well kept, or in bad condition; clean, or dirty? How were the streets paved? Which way did the house face—north, south,

east, or west? Were there trees in front of the house? Trees would be a blessing in a wide street, tempering the rays of the sun, but in a narrow street they would cause disease by obstructing the rays of the sun and making the front rooms damp and unwholesome. The next point of interest was the yard. It was noted whether garbage was allowed to accumulate; the water supply was examined, and it was ascertained whether there were any sources of contamination; whether domestic animals were allowed in the yard. Then the inspector went into the house, visited the cellar, and noted whether the foundation was of stone, brick, or rubble. The ventilation of a house, method of heating, plumbing (especially leaks in the same), should all be examined carefully. The population of a house, the number of families living in it, the number in each family, the number above five years of age, and the number of rooms to each family, were very important data.

The three papers were discussed by Dr. EZRA M. HUNT, of Trenton, N. J.; Dr. HOMER A. JOHNSON, of Chicago; Major ROBINSON and Mr. ERASTUS BROOKS, of New York; Dr. B. HARVEY REED, of Mansfield, O.; Dr. A. N. BELL, of New York; Dr. JOHN FEE, of Kansas City, Mo.; Dr. J. H. RAYMOND, of Brooklyn; Dr. BRIGGS, of St. Louis; Dr. GUSTAVE DEVERON, of New Orleans; Dr. P. H. BRYCE, of Toronto, and Dr. COOK, of Nashville.

The Hygiene of Occupations was the title of the next paper, by Dr. GEORGE H. ROSE, of Baltimore. He prefaced his remarks by alluding to the paucity of literature and statistics with reference to the subject, and then proceeded to deal with the statistics on the subject prepared at the instance of the Massachusetts Legislature, which covered the period between May 1, 1843, and December 31, 1874. The figures showed that cultivators of the soil and brain-workers had a good expectation for long life. Those engaged in the manufacture of chlorinated lime were subject to chronic chlorine poisoning. Persons engaged in the vulcanization of India-rubber were very much troubled with pneumonia, and had a predisposition to rapidly succumb to consumption. Lead-workers suffered from poisoning, and painters were especially liable to the same disease. Mirror-makers, fulminate-makers, batters, and others inhaling dust were liable to consumption, and brass-workers to a peculiar disease termed brass-founders' ague. Stonecutters in Germany lived to the average age of 36 3-100 years, but the figures showed that in this country the average length of life was 40 90-100 years. Rag- and wool-sorters were liable to a peculiar disease, which was probably anthrax. The average life of millers, according to Hirt, was 45 1-10, but according to the Massachusetts figures, 57 14-100. Workmen in grain-elevators suffered from catarrh, and brush-makers were peculiarly liable to phthisis. Firemen on steamers suffered from pulmonary diseases and from heart disease. Statistics showed that brain-workers had a higher expectation of life than any class of men. In conclusion, he suggested that the association should appoint a committee to consider the question of the effects on health of the various avocations, and that each member should give the result of his researches at their annual meetings.

Protective Spectacles for Workmen.—In a paper with this title, Dr. ADOLPH ALT, of St. Louis, adverted to the dangers to the eyesight which attended work in foundries, stone-yards, and other places in which hard chips were constantly flying about, and to the loss of the sight of both eyes in consequence of sympathetic ophthalmia arising from injury to one eye. The all-important object, he contended, was to protect the eye and prevent accidents. For that purpose he recommended that workmen who were exposed to danger from flying chips should wear protective spectacles while at work. Workmen often declined to wear such spectacles—some from ignorance, and some

from vanity. He recommended that employers should be made pecuniarily liable for accidents to men in their employ, and the outcome of such a measure would be that employers would provide protective spectacles and compel the men to wear them. If the meeting could only be the means of some action being taken in that matter, it would have accomplished much good, and earned the thanks of many families.

Heating and Ventilation.—In a paper on these subjects, Dr. CHARLES A. CURTMAN, of St. Louis, alluded to the comparative advantages of the various systems of heating and ventilating public rooms, and thought the hot-air principle the best for the purpose.

The Sanitary Management of Railway Cars and Stations.—Dr. W. THORNTON PARKER, of the army, read a paper with this title. The evils attendant upon attempts to convey sick and injured persons in ordinary cars called, he thought, for immediate legislation. Every railway company should have hospital cars; and at important points, like New York, Chicago, and St. Louis, there should be a system of inspection organized. He maintained, also, that the system of railway-car privies now in use was defective, and called for a radical change.

The President's Address.—In the evening, after a reception to the members of the association, at which the Governor of Missouri made a short address, the PRESIDENT delivered an address on the *Sanitary Responsibilities of the Citizen*. He said the association had come to St. Louis in the hope of awakening in its citizens that interest in their own welfare which they had no right to disregard, if not for their own sakes at least for the sake of their children, and for the sake of the community of which they were a part. Did they realize that quite half the deaths which were happening around and among them need not happen—that their neighbors and relatives had died from diseases due to preventable causes? It was their duty as citizens as far as possible to prevent untimely deaths, and for that reason they should give every attention to sanitation. He cordially invited the citizens to attend the sessions of the association. The topics discussed, he said, could not fail to interest them, for they included the adulteration of food, the pollution of water, the general sanitary improvement of their homes, and the hygienic arrangements of public schools.

(To be continued.)

Miscellany.

THERAPEUTICAL NOTES.

The Abortive Treatment of Diphtheria.—M. Coestu (as quoted by the "Gazette hebdomadaire de médecine et de chirurgie") has employed calomel in two hundred and ninety-eight cases of diphtheria, with the idea of aborting the disease. He gives daily twenty to sixty centigrammes of the drug, divided into two doses. He reports only twelve deaths under this method of treatment.

The Influence of Baths upon the Intra-ocular Circulation.—M. Katzauroy (*ibid.*) has made some careful observations on the effect of warm baths upon the eye. He states that there is first a condition of anæmia, soon followed by marked congestion, which may become dangerous. The practical deduction is that baths should be used sparingly in acute affections of the eye.

Jequiry.—This is a dangerous drug, says Vossius ("Berliner klinischer Wochenschrift"), and ought never to be used in ophthalmic practice, since, while it does not cure either pannus or granulations, it places the cornes in extreme peril.

Antiseptics in Ophthalmology.—According to the "Gaz. hebdomadaire de médecine et de chirurgie," the use of antiseptics in ophthalmology is not only dangerous, but also unnecessary.

méd. et de chir.," Sattler has made experiments upon this subject, and gives the preference to chlorine water as an antiseptic in ophthalmic practice. Next to this solution follow corrosive sublimate, resorcin, hydroquinone, and a watery solution of salicylic acid. Boric acid and iodoform he rejects. The value of these agents is determined by their destructive action upon the micrococci found in the lachrymal sac.

Intra-venous Injections in the Treatment of Cholera.—Dr. Nicolas-Duranty, physician-in-chief to the cholera hospital at Marseilles, contributes to the "Bulletin général de thérapeutique" a paper which was thought sufficiently valuable by Brouardel to be presented at the September meeting of the *Académie de médecine*. The writer briefly describes his technique: Using the instrument of Dieulauf, he chooses a prominent vein in the neck, and passes a caoutchouc band around it above the point at which the vessel is to be opened. The fluid to be injected is placed in a graduated cylinder kept warm by immersion in hot water. The injection is made with a simple cannula in the manner of an ordinary transfusion.

After trying different solutions, he prefers the following, which Hayem has proved to exercise no harmful effect upon the blood:

Water.....	1,000 grammes.
Sodium chloride.....	5 "
Sodium hydrate.....	1 "
Sodium sulphate.....	25 "

As regards the amount to be injected, the rule is to regulate it according to the resulting phenomena. The pulse, strength of the heartbeat, amplitude of the respiration, disappearance of the cyanosis, temperature—in short, the diminution in the symptoms of collapse—all of these are valuable indications to be regarded by the operator. The author says that he has continued the transfusion for ten minutes before symptoms of amelioration appeared. Four to five hundred cubic centimetres will usually be injected at each time.

Six cases are reported at length in which the author followed out his method thoroughly. Only one patient recovered. However, they were all *in articulo* when the experiments were begun.

The writer sums up his article with the remark that, to be of any value, the injections must be given just at the beginning of the stage of collapse, when the veins have not yet lost their elasticity, and the respiration has not become superficial. At such a time the introduction of a fresh quantity of fluid into the vascular system acts as a stimulant. In any case intravenous injections should be regarded as a last resort.

The New York State Medical Association will hold its first annual meeting at the Murray Hill Hotel, New York, on Tuesday, Wednesday, and Thursday, November 18th, 19th, and 20th. The following are among the papers that are expected to be read: An Address by the President; an Address in Surgery, by Dr. E. M. Moore, of Monroe County; Transfusion, by Dr. J. C. Hutchison, of Kings County; The Duration of Contagiousness after Acute Infectious Diseases, by Dr. Alfred L. Carroll, of Richmond County; The Therapeutics of Diphtheria, by Dr. J. W. Moore, of Albany County; The Modern Progress of Materia Medica, by Dr. E. R. Squibb, of Kings County; Notes on Dislocation of the Hip, by Dr. Frederick Hyde, of Cortlandt County; Chronic Intestinal Catarrh, by Dr. J. S. Jamison, of Steuben County; Intestinal Obstruction, by Dr. Avery Segur, of Kings County; The Management of Criminal Abortion, by Dr. W. H. Robb, of Montgomery County; A Case of Acute Lead Poisoning resulting fatally, by Dr. R. H. Sabin, of Albany County; Chronic Mercurial Poisoning, by Dr. Charles Bulkley, of Monroe County; Pyæmia and Death after the Operation for Convergent Squint, by Dr. J. J. A. Burke, of Monroe County; Errors of Refraction, the Importance of their Recognition and Correction in Early Life, by Dr. H. E. Mitchell, of Rensselaer County; The Relations of Habit to Disease, by Dr. C. M. Kittredge, of Dutchess County; The Dietetic Treatment of Dyspepsia, by Dr. Austin Flint, of New York County; On Venesection in the Convulsions of Pregnant and Parturient Women, by Dr. Darwin Colvin, of Wayne County; Report of a Case of Nephro-lithotomy for Calculous Pyelitis, and of a Case of Excision of the Rectum for Cancer, by Dr. W. W. Seymour, of Rensselaer County; The Functions of the Auricles, and Double Synchronous

Amputations, by Dr. U. C. Lynde, of Erie County; An Address in Obstetrics and Gynecology, by Dr. T. Gaillard Thomas, of New York County; The Practice of Medicine Forty Years Ago, with its Comparative Position at Present, by Dr. B. L. Hovey, of Monroe County; On the Use of the Aspirator in Hydrothorax, by Dr. E. D. Ferguson, of Rensselaer County; A New Procedure in Paracentesis Thoracis, by Dr. T. F. Rochester, of Erie County; Notes on Peat as a Surgical Dressing, by Dr. W. S. Tremaine, of Erie County; Fracture of the Base of the Acetabulum, by Dr. C. C. F. Gay, of Erie County; A Case of Tubal Pregnancy, at Full Term, of Fourteen Years' Standing, by Dr. J. G. Orton, of Broome County; A Case of Tubal Pregnancy, considered in Relation to Rupture of the Tube, Diagnosis, and Treatment, by Dr. Nathan Bozeman, of New York County; A Case of Ovarian Cyst, with Operation, by Dr. T. M. Lloyd, of Kings County; Report of a Case of Dislocation of the First Phalanx of the Thumb Forward, by Dr. F. W. Putnam, of Broome County; Common Sense versus Hypothetical Medication in treating Chronic Diseases, by Dr. Jonathan Kneeland, of Oneonta County; Insanity—Preventive Measures, by Dr. John P. Gray, of Oneida County; Cerebral Epilepsy, by Dr. C. F. Macdonald, of Cayuga County; Excision of the Knee in Preference to Amputation in Certain Deformities of the Leg, by Dr. Stephen Smith, of New York County; The Relations between Tuberculous Joint Disease and General Tuberculosis, by Dr. Frederic S. Dennis, of New York County; The Curette, its Place and its Power in Uterine Therapeutics, by Dr. George T. Harrison, of New York County; Some Points in the Management of Breech Cases, by Dr. W. T. Lusk, of New York County; Women as Midwives, by Dr. T. H. Manley, of New York County; An Address on Medicinal and Non-medicinal Therapeutics, by Dr. Austin Flint, of New York County; False Albuminuria, by Dr. Gaspar Griswold, of New York County; The Early Use of the Knife in Nervus of the Cavernous-Angioma Variety as Contrasted with other Modes of Operation for Removal, by Dr. Samuel W. Smith, of New York County; Abscess of the Liver, by Dr. E. G. Janeway, of New York County; Diphtheritic Croup, by Dr. J. Lewis Smith, of New York County; Typical Cases of Diabetes Mellitus not before reported, by Dr. Austin Flint, Jr., of New York County; Report of a Case of Gunshot Wound of the Stomach—Recovery, by Dr. John H. Hinton, of New York County; Report of a Case of Ligation of the Primitive Iliac Artery for Diffuse Aneurysm of the External Iliac Artery, by Dr. J. W. S. Gouley, of New York County.

On Friday morning, the day after the meeting, Dr. Lewis A. Sayre, of New York County, will demonstrate the application of the plaster-of-Paris jacket in the treatment of spondylitis and lateral curvature of the spine, and in the afternoon there will be an excursion to the hospitals and other institutions on the islands in the East River.

The Relations of some Famous Medical Men are thus set forth by Mr. Charles Hawkins, in an interesting historical article contributed to the "Lancet": "A sister of William and John Hunter was the mother of Mathew Baillie and his gifted sister, the well-known authoress. Baillie married the daughter of the celebrated Dr. Denman, the father of the first Lord Denman, distinguished as a great lawyer. Dr. Denman married the aunt of Sir Benjamin Brodie. The second Sir B. Brodie, by his writings in science, gave evidence of his claim to be ranked as a distinguished professor of chemistry. Dr. Baillie's son, Mr. William Hunter Baillie, is one of the present trustees of the Hunterian Museum at the College of Surgeons."

The Bacillus Tuberculosis in Urine.—At a recent meeting of the Medical Society of Berlin, Herr Mendelssohn showed preparations of the *Bacillus tuberculosis* found in the urine of a patient who originally suffered from cystitis and incontinence of urine, and, shortly before death, exhibited symptoms of pulmonary phthisis. As death approached he became almost unconscious, and urine escaped in small quantities. It was thick, of a red-yellow color, very albuminous, and precipitated a thick deposit, consisting principally of pus; also a considerable quantity of whitish flakes and lumps, which were really shreds of tissue. Dry preparations were made of the sediment, and stained according to Ehrlich's method. The bacillus of Koch was found in the particles of the bladder-tissue. This preparation is especially interesting, as the arrangement of the bacilli corresponds exactly with the description Koch has given in his last work.—*Brit. Med. Jour.*

Original Communications.

CASES OF

BUCCAL TUBERCULOSIS.*

By THOMAS AMORY DE BLOIS, M. D.,

BOSTON.

CASES of tuberculosis involving the buccal cavity are certainly sufficiently rare in this country to merit mention whenever they are met with, either where it first shows itself in the mouth, or when, after manifesting its presence in other parts of the body, it finally extends itself into that region.

I do not think that we have any good reason to doubt that there is always a deposit of tubercle in the lungs before we find it either in the pharynx or in the larynx, although we may not have the physical signs in the chest to indicate its presence.

Why, then, should there be any distinction made between cases which appear primarily and those which appear secondarily in the buccal cavity?

I have the privilege of reporting to-day two cases of this rare affection, similar only in the fact that they both proved speedily fatal, which fact, indeed, is common to all the cases of this affection heretofore published. In the one, the buccal lesion was soon seen; in the other, it was the last extension of the disease.

CASE I.—J. O'C., a native of Prince Edward's Island, aged thirty years, always of delicate constitution, and inheriting from both parents a tendency to pulmonary disease. A few months prior to his arrival in Boston he exhibited signs which to his friends appeared to be sufficiently serious to warrant medical examination. To use the patient's own words, evidences of consumption were found. He did not want for good or well-directed efforts at treatment. Two months before I saw him he first noticed a difficulty in eating. The back part of his mouth appeared to him stiff and sore; the soft palate felt too thick, and this soreness, redness, and stiffness, according to his own story, gradually extended farther and farther to the front, until he came to Boston, when he very speedily found his way to the Boston Dispensary, February 8, 1883.

At the time I saw him he exhibited the following condition: The tonsils, velum, hard palate, and base of the tongue were one continuous mass of ulceration, showing that gnawed and worm-eaten appearance so often seen on the ary-epiglottic folds in cases of laryngeal tuberculosis. The edge of the velum and the uvula were denuded from this process, and farther toward the front of the mouth the mucous membrane was studded with gray nodules of tubercle which had not yet broken down. Some distance in front of the junction of the hard and soft palates there was a perforation through the bones into the posterior nares, where, with the probe, a large extent of denuded and necrosed bone could be felt on the bony septum and turbinated bones, showing that region to be fully involved in the general destructive process.

An imperfect view of the larynx was obtained with the greatest difficulty, owing to the extreme degree of pain that touching the soft palate caused, but the larynx appeared to be

free from ulceration, and, as the voice was unimpaired, except the muffling due to the thickened palate, it would seem that it had escaped the invasion of the disease. The patient said, also, that he felt no pain about the thyroid cartilage during deglutition, but that the pain at the isthmus of the fauces was more than he could bear, and he preferred not to eat at all. Certainly his appearance would have indicated that he had pretty well carried out that rule, as there was a degree of cachexia seldom seen. There was no specific history whatever, and several dermatologists carefully examined the patient with a view to discover if there was any unacknowledged taint.

Everything possible in the way of sustaining treatment was carried out, and careful cleansing and the daily use of iodoform as local treatment for the mouth; but the patient rapidly grew weaker, owing in part, certainly, to his inability to swallow solid food of any kind. A great deal of attention was paid to the treatment of the necrosed bones in the posterior nares, and what was possible was removed through the opening already mentioned, but the parts were in such a condition that nothing could be done through the naso-pharyngeal space.

This man remained as an out-patient for some weeks, deglutition becoming gradually more painful, until finally it was with the greatest difficulty that even fluids were swallowed, for even their impact against the soft palate caused the most exquisite pain. He was then sent to the Carney Hospital, from the records of which I find that:

"J. O'C., aged thirty, born in Prince Edward's Island, single, by occupation a clerk, was received under the head 'Phthisis,' March 3, 1883. He began to cough November 1st. On admission, muco-purulent expectoration, night-sweats; voice lost nine weeks ago, obliging him to close the nose to swallow. Ordered milk enema, potass. chlorate gargle. March 4th, iodoform blown into roof of mouth. March 8th, died."

An autopsy was permitted by the relatives, but, unfortunately, by some blunder at the hospital, it was not made, and this most valuable specimen was lost.

By the hospital records it would appear that no examination was made of either lungs or throat, and the voice was never lost, as stated in the record, for I saw him at the hospital the day before he died, and he spoke quite distinctly, although his voice was muffled, evidently from the perforation of the palate, but it was not at all the aphonia of laryngeal tuberculosis.

CASE II.—Miss E. D. This was more properly a case of laryngeal tuberculosis, for the first evidence of disease was derived from the throat symptoms; but, by its extension into the buccal cavity, it merits a place in this paper.

The patient, a young lady, one of the assistants at the Boston Public Library, had always enjoyed excellent health. She first noticed a hoarseness, which not disappearing under the efforts of her family physician, she saw Dr. F. I. Knight, of Boston, by whom she was examined, and who has kindly given me these few notes from his case-book:

"E. D., aged twenty-four, was examined November 4, 1882. Father died of 'lung fever,' mother died parturient, brother died, according to patient's own words, from 'consumption of the blood.' She stated that she never had had any trouble with the lungs. Had been hoarse for two months, with slight cough for eight months. Gaining flesh on cod-liver oil. Had had hæmoptysis, losing about a tablespoonful of blood. Said she felt generally well. Examination showed a superficial ulceration of both ventricular bands. Abundant moist râles in right front of chest."

After this examination she went back to the care of her former attendant. In December she came to the office of Dr. S. W. Langmaid for treatment. She was now very hoarse, and,

* Read before the American Laryngological Association, May 14, 1884.

after treatment by lime for some time, in February, 1883, by his advice, she went to Florida. Here she passed the spring months, and, although somewhat benefited by the climate, she was entirely without any intelligent local treatment. Her physician there made several unsuccessful attempts to apply nitrate-of-silver solution to her throat, causing her thereby much pain. She returned from Florida in May, and went as an out-patient to the City Hospital, where she came under my care about June 1, 1883, and from there came to my office every day. An examination of the chest was always declined, so that I am unable to state what were the physical signs at that time.

There was marked aphonia, the patient barely being able to whisper, and it was with the greatest difficulty that what she said could be distinguished at all. The pharynx at this time appeared to be normal, but the larynx in all parts seemed to be deeply ulcerated, the ary-epiglottic folds were greatly swollen and edematous, deglutition was performed with the greatest difficulty and was almost always accompanied by violent attacks of coughing, and, generally, liquid and semi-solid food had to be used. Carefully applied sprays for cleansing and local treatment were used; also occasional insufflations of morphine, and always of iodoform; also nitrate of silver and local scarification, when it appeared to be indicated. During the months of June and July there was great improvement; the voice somewhat improved, and the deglutition was much easier. Solid food could be swallowed with comfort, and there was a gain of several pounds in her weight. But during the month of August the patient again commenced to fail rapidly, and the difficulty in swallowing returned. About this time there appeared on the tonsils, particularly the right, a small, grayish spot, which closely resembled tubercle in its gross appearance. Implanting itself first on the edge of a lacuna, it seemed to progress both inward and outward, spreading into the interior and on the buccal aspect of the tonsil. The pain in swallowing seemed to be somewhat increased, but not so much as might have been expected.

All through the month of September the patient lost ground and the ulceration increased. There was considerable dyspnea, and it became evident that she could last but a few weeks longer. She was, therefore, sent to the Boston City Hospital, from the records of which the following notes are taken:

October 5th.—E. D., aged twenty-five, single. Family history fair; catamenia regular, last two months ago. Trouble began a year ago; gave up work five weeks ago; not sick abed; trouble began with cough, especially at night; dry, or with slight yellowish expectoration later, and at present thick, white, and frothy; slight hemoptysis at first; none since. Frequent chilly sensations; hoarseness for the last nine months, and loss of voice; no night-sweats; some shortness of breath; no pain in the chest; occasional palpitation of the heart; appetite good; difficulty in swallowing for the last six months, etc. Temperature 100.6°, pulse 132. Tongue slightly pale and moist. Respiration 36. Has lost forty pounds in nine months. Is weak and trembling; former weight one hundred and thirty-five pounds. *Lungs:* Dullness over both fronts, most marked on right. Under right clavicle, cracked-pot resonance. Broncho-vesicular respiration over whole right front and upper part of left. Under right clavicle, cavernous respiration. Moist râles over both fronts, most numerous on right, and bubbling râles under right clavicle. Increased whisper in both chests, but most marked on right.

Upper halves of back give corresponding signs to fronts. Urine normal, acid 1.020, trace of albumin. Sediment squamous epithelium.

Sherry, brandy, opium, carbonate of ammonium, etc.

22d.—Four days ago diarrhoea began and persisted until yesterday noon; dejections numerous, fifteen or more in twenty-

four hours; watery diarrhoea weakens patient greatly. Began to fail rapidly last night, and died at 12.45 p. m. to-day.

An autopsy was allowed, and was made by Dr. W. W. Gannett, Pathologist to the City Hospital.

E. D.—*Diagnosis:* tubercular tonsillitis; extensive tubercular ulceration of the larynx; tubercular ulceration of the mucous membranes of the bronchi and trachea; tubercular peribronchitis; bronchiectasis, and one cavity from ulceration; miliary tuberculosis of the spleen, kidney, and liver; tubercular ulcerations of the intestines.

Under the microscope, sections from the larynx showed evidence of tubercle, and many of these nodules are easily seen on the specimen.

The following note I received from Dr. Gannett:

"110 BOYLSTON STREET, April 27, 1884.

"DEAR DOCTOR: I have examined various portions of the tonsil in your case, but fail to find any evidence of tuberculosis.

"Numerous sections made so as to include parts of the wall of the cavity in the tonsil give a like negative result.

"In the tissues about the arytenoid cartilages and vocal cords, on the contrary, there are numerous tubercles.

"A diagnosis of tuberculosis or tubercular ulceration of the tonsil is, therefore, not warranted.

"Sincerely,

"W. W. GANNETT.

"To Dr. T. A. DE BLOIS."

As regards the cases of this affection on record, I regret that the "Index-Catalogue of the Library of the Surgeon-General's Office" is not sufficiently advanced to furnish me references on this subject. However, by carefully searching the "Index Medicus" from the beginning, I find cases reported in 1878 by Bordenave, Routier, Gaucher, von Ziemssen, and Laboulbène; in 1880 by Caselli and Barth; in 1881 by Zaverthal, Chassagnette, and Lennox Browne; in 1882 by E. W. Cushing and Bosworth; and in 1883 by Gungenheim, Lennox Browne, Schnitzler, and Cadier, besides the case which our friend Dr. Bosworth so kindly showed us at last year's congress. Most of these authorities cite other cases seen by other observers, so that there does not appear to be any great dearth of literature on this subject, at least in Europe.

Although Isambert says that there is little difficulty in the differentiation from syphilis, yet almost all the other authorities are very profuse in their rules for this differentiation. Routier states that one of his cases was for some time treated as syphilis, and then mistaken for epithelioma, cancer of the tongue, gummatous tumor, etc., but that the lesion healed under local applications of the tincture of iodine and the internal use of iodide of potassium, although it subsequently relapsed.

The ordinary treatment for syphilis is generally considered to do more harm than good in tuberculosis of the mouth.

The prognosis is, by all authorities, believed to be of the worst. Many cases where the local lesion has been temporarily healed are reported, but it has always relapsed when the patient has not died from exhaustion and the effects of the disease on the general health.

As Isambert states, it is at most a matter of some months.

As regards the destruction of tissue from perforation,

some of the reported cases have been examples of this, and others have seemed to stop short. Cadier reports one case of perforation of the velum with loss of the uvula.

I have had an example of this complication in a case believed to have been buccal tuberculosis, but, as I was not positive that there was not also syphilis, I have refrained from reporting it.

The record of treatment is but a reiteration of many disappointments. Lennox Browne speaks of the successful local healing of tubercular ulcerations with the galvanic cautery. Routier indorses the use of iodine and nitrate of silver. Isambert speaks of the sad consequences of their use, as it only hastens the fall of the epidermis and the uncovering of the granulations. He, like his echo, Cadier, recommends glycerin and morphine.

I have found nothing so useful and soothing as iodoform, and, although the buccal ulcerations in my cases never healed, yet their pain was always diminished, and swallowing was in one case rendered possible by its use.

I can not regard tubercular ulceration of the buccal cavity as anything else than an anomaly in the deposit of tubercle, in a case of general tuberculosis. It may precede and it may follow the discovery of the physical signs in the chest, but, so far as I have been able to find, there has never been a case in which the patient has not, sooner or later, succumbed to the ravages of tuberculosis.

DISCUSSION.

Dr. LANGMAID said, in adding a word to the history: When I first saw the girl she was so plump and finely developed that no one would have supposed she had disease of the lungs. Still, upon looking into the mouth, it was evident that there must be disease of the pulmonary organs. On examination, signs of limited phthisis were found under the right clavicle. With the patient's excellent nutritive condition, the case was one which would lead the physician to hope, with proper care, for a number of years of comparative comfort. But the laryngeal complication was against such hopes. When she came to me, dysphagia was severe, but the result of local treatment was very marked, and when she went to Florida she ate with comfort. It was hoped this relief might continue, but she had not been in Florida more than three weeks when the throat again became sore. There she could not receive proper local treatment. This is a point which has interested me in this and in other cases, namely, that laryngeal phthisis changes the prognosis regarding the general disease so much that it also necessitates a different course of treatment. I hesitate to send patients suffering from laryngeal phthisis away from home, preferring to keep them even in an injurious climate where they can receive proper local treatment to sending them away to a climate which will be better for the pulmonary condition, but where no throat supervision can be exercised. About this time a patient came to me from New Mexico, and, on examination, I found him to be suffering from an ulceration within the larynx. He had returned from Mexico because of the increasing severity of laryngeal dysphagia. I found what I believe was a tubercular ulceration in the naso-pharyngeal space, presenting very much the appearance seen in Dr. Bosworth's case shown to the society a year ago. The ulcer, however, proved not to be tubercular, and healed under treatment. But the laryngeal difficulty went on, and the man died of phthisis.

The PRESIDENT thought the paper presented by Dr. De Blois an exceedingly important one. So far as I know, he said, this

is the first case in which a post-mortem examination has been made. I do not see why the tubercular process may not be one and the same thing whether it occurs in the larynx, tongue, or pharynx, or elsewhere. Certainly the gross appearances are to my sight identical, and heretofore I have had no doubt whatever that, at least in the last stages of phthisis, there was a tubercular deposit in the special parts mentioned. Many of those present saw the girl presented last year, nineteen years of age, healthy-looking, with extensive ulceration of the soft palate, pharynx, and larynx. To look at her, no one would have supposed that she was in bad health. Still, she died within six months from exhaustion. Pain referable to the tubercular ulcer was kept entirely under control by iodoform and morphine. Furthermore, no lung complication could be detected by physical examination. It seems to me that too much importance has been attached to the impossibility of tubercular deposit occurring primarily in the upper air-passages. We may find tubercle in any other part of the body as a primary deposit, but, with reference to the tongue and larynx, some are inclined to doubt its existence. For my part, I can see no reason why the larynx may not be the primary seat of tubercle. A singular fact regarding tubercle of the upper air-passages is that the closer it occurs to the mouth or the outer world the more serious is the prognosis. Pulmonary tuberculosis may be recovered from; laryngeal tuberculosis, very rarely; while buccal tuberculosis, so far as observation goes, is never recovered from, and the symptoms are very difficult to allay.

Dr. DE BLOIS, in closing the discussion, said: Perhaps I have not brought out the fact that, at the autopsy, tubercular ulceration was found in the intestines, the kidneys, and the liver, and that there was tubercular ulceration extending well down the trachea.

THE NEW SPECIFIC FOR RHEUMATISM.

BEING AN ANALYSIS OF ONE HUNDRED AND EIGHTEEN CASES TREATED WITH THE OIL OF GAULTHERIA.*

By H. H. SEELYE, A. M., M. D., AMHERST, MASS.,
LATE HOUSE PHYSICIAN IN BELLEVUE HOSPITAL.

THE contribution which I have to present to the members of this society to-day embodies the results of an eighteen months' personal experience with the oil of gaultheria in the treatment of the various types of rheumatism, the observations having been made in three of the wards of a large hospital where special advantages were offered for testing the merits of the drug.

About two years ago I believe the oil of wintergreen was first suggested as a substitute for salicylic acid and its salts, the latter being a chemical derivative from the former. Very soon after this our visiting physician at the hospital, Dr. Henry F. Walker, of New York, proposed that we experiment for a while with this new remedy to see if it had any merits. We accordingly began to use it at once, and with such surprising results that from that day onward it was always our main reliance in the treatment of all rheumatoid affections.

The medicine we found could be administered in various ways, the most agreeable being in capsules, either alone or mixed with salicylate of sodium, or in soda-water as a flavoring. But the method we employed the most was to give it

* Read before the Hampshire County, Mass., Medical Society, July 9, 1884.

in an emulsion of ten minims of the oil to half a drachm each of glycerin and water. If the patient had been sick for some time, and the inflammation of the joints was extensive, we usually ordered two drachms of this mixture every two hours during the day, and every three hours throughout the night. Under this treatment almost invariably within twelve hours the patient would express great relief, and by the end of twenty-four hours the pain and swelling would have left all the joints except, perhaps, a little in some one articulation; and there would only remain a slight stiffness of the previously inflamed parts, due probably to the distension of the adjacent tissues by reason of the swelling, which had now disappeared. Before or about this time, however, the patient would generally complain of some ringing in the ears and deafness, similar to that produced by large doses of quinine, but usually not so markedly annoying in character, and he would be apt to have some headache or a sensation of fullness in the head. These symptoms occurring synchronously with the cessation of pain, tenderness, and swelling from the joints, and with a sudden fall of temperature to the normal, were generally considered an indication for diminishing the dose of the medicine, and it was therefore usually reduced to one drachm every three or four hours, according to the relative amount of the cerebral and joint disturbance. If too much of the medicine was still given, its evil effects became more marked. The patient would now experience a loathing of the drug; nausea and vomiting would set in; the deafness, tinnitus aurium, and headache would increase; the muscles of the hands, limbs, and face would become tremulous; the countenance would be flushed and the whole body be bathed in a profuse perspiration; and at length the patient would become delirious, till in some instances the symptoms so closely resembled those of delirium tremens that it was often difficult or quite impossible to tell whether they were really the manifestations of the physiological limits of the remedy, or those of an alcoholic patient deprived of his accustomed stimulants. These extreme symptoms, more or less modified, were observed by us in perhaps eight or ten cases of acute articular rheumatism, but they almost invariably occurred in patients who had been hard drinkers, and in whom the attack of rheumatism was most probably due to some unusual exposure to cold or wet while in a state of intoxication. In the large majority of cases only a little ringing in the ears was complained of, and this would soon cease upon the diminution or complete withdrawal of the drug. There were also very many cases in which no evil results were ever manifested, but the patient speedily recovered without experiencing any annoyance.

There would always be a certain number of cases which would yield promptly to the remedy, so far as relieving the acute suffering, reducing the inflammatory swelling, and lowering the temperature were concerned, but still a little pain on motion, or a slight stiffness, would hang about some one joint, usually the shoulder, wrist, finger, or ankle, and it would be several days longer before the patient could say that he was perfectly free from pain and felt well. Again, there would be comparatively few patients who, after being speedily

relieved, would be up and moving about the ward for some days without taking any of the medicine, and then there would come a sudden relapse, and the pains would return, though with less severity, in one or more joints. But here a renewal of the remedy usually induced a rapid recovery. In order to guard against such relapses and to be sure that the cure was permanent, it was our custom to keep the patient in bed and to continue the medicine in smaller and less frequent doses for at least two days after all symptoms of the disease had disappeared, then to retain him in the ward for two or three days longer without giving him any medicine but tonics, and then, if there was no return of the symptoms, to discharge him cured. In a very large majority of cases the patients themselves asked, about this time, to be discharged, because they felt so perfectly well.

The history of a German patient, thirty-five years of age, who was admitted to the hospital last spring, is a good illustration of how much more rapid are the cures wrought by this medicine than by those used years ago. This man had, in the past fourteen years, had two attacks of rheumatism, one of which confined him to the house for fourteen weeks, and the other for twelve weeks. Four days before admission he was taken with his third attack, which, beginning with pains in his legs, shifted about until it involved both ankles and knees and the right hip joint, so that he was quite unable to walk. These joints were tender and swollen, he had a temperature of 102° , and a systolic cardiac murmur could be heard both at the apex and at the base. He was ordered to take ten minims of the oil of gaultheria every two hours. Twelve hours later he expressed himself as free from pain, and there was afterward no recurrence of his symptoms. Five days later he was discharged, at his own request, cured. His shortest previous attack had lasted twelve weeks, while here he was effectually cured in twelve hours! His astonishment at his speedy relief was as great as it was gratifying to us.

The one variety of rheumatism in which this remedy was found to be most efficient and rapid as well as permanent in its action, is what is commonly known as acute articular rheumatism, and the more acute the attack, the more joints are involved, the more inflamed and swollen they are, and the higher the temperature, so much the more speedy and complete is the cure apt to be. It is, in fact, in these worst of all cases that the remedial power of this drug is most wonderful to see. Yet it must not be supposed that it is of insignificant value in the more subacute forms of the disease; for here too it almost invariably diminishes the severity of the suffering, and, after a time, often effects a radical cure.

In the chronic forms of rheumatism the action of the remedy seems to be limited in most cases to merely giving prompt relief from the acute pains and swellings attending exacerbations of the malady, and for this purpose it is very efficient. But, like most other drugs, it is powerless to correct the permanent damage done to joints which have long been undergoing morbid changes in their fibrous and cartilaginous structures. The same statement is true, as a rule, in regard to those other obstinate forms of the disease

known by the various names of gouty rheumatism, arthritis deformans, rheumatoid arthritis, gonorrhœal and syphilitic rheumatism, etc. In the active stage of all these some temporary relief will usually be afforded, while a complete recovery under its influence is very rare.

Muscular rheumatism, lumbago, coxalgia, sciatica, and the like seem to be variously influenced. Some patients, after the medicine is begun, experience almost immediate relief, while others do not seem to be benefited at all. Possibly this uncertainty of action is dependent upon whether the muscular and neurotic pains are primarily due to an irritation from some morbid element diffused throughout the circulation, which the medicine, it may be, counteracts, or whether they are due to a simple inflammation of the fibrous coverings, from some strain, bruise, unusual exposure, or overaction of the affected part.

As regards the frequency of cardiac complications developing under this plan of treatment, it is certain that the liability to them is not increased. In one or two of our cases a pericardial or endocardial murmur seemed to develop while the patient was under observation, but in more instances a murmur which was audible upon admission disappeared entirely under this treatment. It is doubtful if the medicine has any such depressing action on the heart as is attributed to salicylic acid and its salts. There was, however, one death among the cases recorded, which occurred so suddenly and unexpectedly as to raise strong suspicions at the time as to how much the medicine had to do with it. The man had for several days previous to his admission to the ward been under treatment for acute alcoholism, from which he had about recovered, but he was now suffering from arthritic pains, probably brought on by recent exposure. He was put on the rheumatic mixture, which speedily gave him relief. Thirty-six hours later, at midnight, he was asleep and apparently in excellent condition, having a strong, regular pulse. No cardiac murmur had been made out. One hour later he was found dead in bed, where he had seemingly expired suddenly from heart failure. He had not taken any of the medicine for several hours previous. Whether this death was due to fatty degeneration of the heart in a persistent consumer of alcohol, or to an unrecognized valvular lesion, or to the depressing action of the medicine, or of the rheumatic poison circulating in the blood, could not be determined, as no autopsy was allowed. But this sudden collapse was probably a coincidence with, or a consequence of, the disease itself, rather than a result of the treatment pursued.

Having now presented, in a general way, a few facts brought out in the course of our experimentations with this new anti-rheumatic remedy, its advantages over all previous methods of treatment will be shown more vividly by presenting a few of our statistics in a tabulated form. Though "figures can not lie," yet they can often come short of expressing the whole truth; and so those about to be presented will represent only the relative rather than the actual superiority of this new method of treatment. These figures are all taken from the records in the history-books of the hospital, and they include every case of rheumatism in any form treated by the oil of gaultheria, and that includes

every case admitted to any one of the two male and one female wards in which this remedy was being tested. Of course, many of these cases of rheumatism had at the same time associated complications, such as heart, pulmonary, cerebral, or nervous lesions, necessitating the use, to a greater or less extent, of certain other drugs or remedies indicated by these. Then, too, in some obstinate cases, where only tardy or partial relief was given by the gaultheria, other older and well-established remedies, such as blisters, iodide of potash, and the alkalies, were brought into requisition as adjuvants to the drug on which the main reliance was placed. Still, in the majority of uncomplicated cases, recourse was had to only the one kind of medicine until all the symptoms had disappeared, and it was only after convalescence had become fully established that iron or other tonics were added, in order to hasten the repair of the system, now more or less broken down by the previously vitiated condition of the blood. It is altogether probable that none of these adjuvants had any material influence in shortening the duration of the acute inflammations; while iodide of potash, colchicum, and tonics possibly did much to relieve, without curing, some of the cases classed as chronic, gouty, rheumatoid, and the like, and which have, therefore, not been tabulated as to their duration with the regular acute cases, which were generally cured by a more limited course of medication. These chronic cases were seldom if ever cured, but in most of them there was marked benefit derived from the treatment, the gaultheria seeming to do most good in relieving the most aggravated symptoms. Any case that was completely cured within six weeks was considered as acute, and few, if any, that resisted treatment for that length of time, ever yielded entirely. All such have, therefore, been classed and tabulated as chronic, gouty, rheumatoid, muscular, gonorrhœal, syphilitic, neurotic, and so forth, according to their apparent cause.

Of the class termed acute, there were ninety cases which came under this special course of treatment within the eighteen months of experimentation, and of the chronic and other varieties there were twenty-eight recorded cases—making a total of one hundred and eighteen cases treated in the three wards under observation. A few other acute cases, treated similarly in other wards of the hospital and in private practice, bore out the same deductions as were drawn from these recorded cases.

In all of the tabulated cases care was taken not to use salicylic acid in any form, lest it might influence and vitiate the result, and, moreover, it was desirable to compare the effects of this new treatment with those of the salicylate method, which was still the main reliance in most of the other medical wards of the hospital. It was therefore the task of the writer to collect an equal number of successive cases treated, as far as possible during the same months, by the salicylates, in other wards, and in the same three wards during the months prior to the beginning of the gaultheria plan of treatment, and then to tabulate and compare the results of these two methods. Recognizing fully the valuelessness of statistics, unless honestly and conscientiously compiled, he observed every precaution against being influenced by prejudice, and every acute case was taken and

tabulated in the exact order in which it was recorded in the various history-books consulted, and wherever there was any doubt as to the justice of the record the benefit of it was given to the other side. So it is his firm and honest belief that the figures about to be presented do not overestimate the relative superiority of the one over the other method of treatment.

It must be added, however, that in looking over the history-books of the different wards, it was found in many cases that the purely salicylate treatment had not been exclusively carried out, but had either been supported or soon entirely supplanted by other remedies, including the alkalies, iodide of potash, colchicum, iron, quinine, cod-liver oil, and local applications; yet in all these cases the salicylic acid was probably the chief reliance and the most efficient agent in the ultimate cure.

(To be concluded.)

THE INFLUENCE EXERTED ON THE SINGING VOICE BY GLANDULAR HYPERTROPHY AT THE BASE OF THE TONGUE.

By HOLBROOK CURTIS, M.D.,

LARYNGOLOGIST TO THE DEMILT DISPENSARY.

THE fact that glandular hypertrophy—analogueous to the adenoid growths found so frequently invading the pharyngeal vault—may appear at the base of the tongue, and enter as an important factor into the diagnosis of diseases of the throat, seems to have been entirely overlooked by laryngologists. In no text-book treating of throat diseases can I find mention made of the fact that the condition may exist, nor have the authors who are considered to be authorities on the mechanism of singing alluded to this pathological condition, which, either by direct mechanical obstruction or by reflex influence, may be the immediate or remote cause of *dysphonia*. The subject has lately been presented to me in such interesting form that I do not hesitate to give the results of my experience and research to the profession—a thing most conveniently and concisely done by citing from my note-book several illustrative cases:

CASE I.—Miss Rose B., aged twenty-four, presented herself to me eighteen months since with the following history: The patient was brought up in a small town in California; was possessed of a remarkable voice, which led to an engagement as soprano in one of the larger churches of San Francisco. Here she attracted so much attention that a well-known impresario induced her to join his company, to take the part of a prima donna, who, though advertised, had been suddenly taken sick. After ten days of constant study and rehearsal she sang brilliantly the leading rôle in "Martha." At the close of the San Francisco engagement she traveled with the company to Denver, Col., where she contracted an *acute laryngitis*. Though unable to speak above a whisper, she continued to sing for six nights in "grand opera," with constant rehearsal, at the end of which time her voice left her entirely. The patient took a complete rest, and put herself under medical treatment; but, though the cords showed no apparent change, and nothing seemed to be the matter with her larynx, she never regained her voice to such an extent that she was enabled to resume her singing for any considerable length of time. When she placed herself under my treatment she had been in the chorus of a bur-

lesque opera company of this city for the space of two years. She complained that her voice would be brilliant for a night, but that the next evening she was often unable to sing at all, flatted continually, and broke on anything above her usual middle register. Her voice became tired after speaking or singing, and she often lost it entirely. She had been told that she had paralysis of the cords, had been treated with sprays, electricity, and constitutionally, but never seemed to improve. Continued rest only gave her a few days' improvement. A careful examination of the *larynx* revealed nothing abnormal; but a view of the vocal cords was extremely difficult, owing to an apparently relaxed condition of the epiglottis. Only with a high-pitched (E) sound could I see the cords in any of their extent. By gentle traction on the tongue I saw in the mirror a luxuriant glandular enlargement at the base of the tongue, crowding into the *glossopiglottic fossa* to such an extent that the epiglottis was prevented from assuming its vertical aspect, hence accounting for the difficulty I had experienced in viewing the vocal cords. The epiglottis itself was congested, but the larynx as well as the pharynx was anæmic. With the exception of this condition, there was nothing to note. The patient was in excellent physical condition, and could not account for the throat having "rusted out." I immediately instituted a tonic treatment, combined with small doses of iodide of potash, and every few days made applications of chromic acid to the glandular hypertrophy. All exercise of the voice was denied, and every attention was paid to general hygiene, much out-door exercise being advocated. After the growths had been effectually removed, I simply made astringent applications to the throat at intervals, and she commenced a limited use of the voice. She informed me that the "tired feeling" in her throat, and the pains which often "shot up to her ears" when she had used her throat too severely, had never recurred since the hypertrophy had been removed. At the end of six months Miss B. was again assuming principal rôles, and she lately writes me that her voice has been steadily improving ever since.

CASE II.—Mr. G., baritone, of an opera company, came to me in October a year ago. His voice was uncertain: always "tired out" when even but slightly used. He had lost engagements on account of his uncertain register, had dropped from "principal" to "chorus." He was worse after stimulating. He had dull pains in the throat, and always felt like clapping the throat with his hand and swallowing. He had consulted several eminent specialists of this city and in Boston, and obtained but temporary relief. Examination revealed a condition similar to that cited (Case I) above, with the exception that an infiltration process had invaded the diseased follicles, so that hard, cheesy nodules were readily removed by the aid of curved forceps. The hypertrophied follicles impinged on the epiglottis in the same manner as mentioned previously. I treated the case temporarily with a solution of equal parts of liq. ferri subsulphatis, tr. iodinii, and glycerin, which relieved him and allowed of his continuing his engagement. However, on the first vacation he took advantage of I made applications of Vienna paste, after forcibly drawing his tongue forward—a treatment more painful, but attended with quicker results, than that with chromic acid. Following up the removal of the glandular tissue with a course of astringent treatment, I had the pleasure of discharging my patient in March comparatively well.

CASE III.—Miss S., aged nineteen, came to me in May last. She said she had lost her voice suddenly in January "after singing with a severe cold." She had rapidly lost flesh. The condition had been diagnosticated as *laryngeal phthisis*. She complained of severe pains in the throat, shooting down to the clavicle and up to the ears. She had not spoken aloud for three months, communicating entirely by means of a writing-

pad which she carried. She could speak a few words aloud, but the effort was invariably followed by such severe pain in her throat that she seldom made the attempt. There was no cough, except a nervous hacking, caused by a tickling sensation and feeling of great dryness when she tried to speak. When she appeared at my office her neck was covered with scars, the result of frequent applications of fly blisters externally, cantharidal collodion, etc., used to set up counter-irritation. There was marked sensitiveness on perussing over the superior laryngeal region. Laryngoscopic examination showed the vocal cords to be normal, and there was no pathological condition in the *larynx* or the *pharynx*, except excessive anæmia, but at the base of the tongue there was an hypertrophied mass of tissue, soft in consistence, presenting the general appearance of such a mass of agglutinated adenoid vegetations as one sometimes sees in the pharyngeal vault. The hypertrophic tissue was of the size of a walnut, and had adapted itself in conformity with the outlines of the epiglottis, forming a soft cushion anteriorly. From fragments which I was enabled to examine microscopically, I was led to believe the growth to be adeno-myxomatous, loose in structure, and to have undergone no fatty or caseous degeneration.

Profiting by past experience, I at once employed Jarvis's snare, together with caustics, and, to my surprise, at the end of ten days she could speak for some minutes without pain. In three weeks' time, the growth having been entirely removed, she returned to her home in the country. I directed that applications of iron, iodine, and glycerin should be made every other day, and taught a member of her family how to use the brush by the aid of a No. 8 mirror. I am informed that to-day the patient is perfectly well.

A consideration of these cases will, I think, serve to call attention to the fact that hypertrophy at the base of the tongue, and in many cases very slight hypertrophy, easily overlooked in laryngoscopic examination, will account for voice failure, either by direct mechanical obstruction to the free opening of the epiglottis, or by a reflex action exerted on the motor laryngeal nerves.

29 WEST THIRTIETH STREET.

ON THE PREVENTION AND TREATMENT OF PUERPERAL FEVER

FROM AN ETIOLOGICAL STANDPOINT.

By W. D. SCHUYLER, M. D.

(Concluded from page 407.)

Treatment of Puerperal Fever and of Puerperal Septicæmia.—For the treatment of these affections, when such are set up—as they comprise similar pathological ensembles—the means to be resorted to are, therefore, in the main, the same. In septicæmia, however, there is likely to be present a greater degree of adynamia, which especially indicates, on the one hand, tonics, on the other an avoidance of all medication which depresses vital action.

However the views herein advanced may differ from those advocated in Dr. Thomas's paper as to the character and ætiology of these diseases, and, therefore, as to the *rational* indications to be followed for their prevention, yet in respect to an improved therapeutics to be adopted in their treatment, and especially in regard to the main measure so prominently brought forward by that author—the use of antiseptic injections into the vagina, or into the uterine

cavity when such are indicated—I am in entire accord with him. Such injections for the purpose of removing septic materials, of destroying the local action of a contagium (zymotic), or of checking an absorbent action (septic) in and from the generative tract, are in accordance with a most natural indication, and, happily, are very efficient in their results.

No physician—who has pursued, almost hopelessly, for several days and nights until death has terminated the scene, the methods of treatment advised and practiced prior to antiseptic washings—can fail to be thankful to Dr. Thomas for his paper, and especially for his prominent introduction of this measure.

That intra-uterine injections have not been more used heretofore, in view of the danger apprehended from the passage of the fluid through the Fallopian tubes and into the peritoneal cavity, is most natural. Now, however, with greater experience, and upon rational grounds, we know that, on account of the inflammatory endometrial swelling which has occurred and is present, those tubes are closed, and that we may boldly resort to the measure when proper indications for its use exist, especially if we operate with suitable apparatus and with due caution.

The indications to be followed in the treatment of both puerperal fever and puerperal septicæmia arise from local and general conditions, and are both causal and symptomatic.

The local or causal are to empty, cleanse, and disinfect the generative tract, wherever such may be the seat of infection, of or zymotic or septic action. This is accomplished by resorting to the measure referred to, disinfecting or aseptic injections, which injections evacuate putrid material and destroy putrescent or poisonous zymotic action.

The special indication for injections—which I hold should lead all other measures of treatment—and, equally, for repeating the operation, is a sudden and otherwise unexplainable marked rise of the temperature. Whenever there occurs such a thermal rise in a puerpera, especially if there is reason for believing the woman has been exposed to the contagium of puerperal fever, or for thinking she has retained placenta, or retained decomposing clots, or if any other reason exists for suspecting that septic or zymotic action is going on; and, if with this thermal rise there are an accelerated pulse, cessation of lochial discharge, irritability or paresis of the bladder, abdominal tenderness and tympanites, the question of exploring the canal and of giving an aseptic injection becomes paramount to all others; and, in general, a temperature marking of 105° or upward will decide in favor of the operation. If the indication is correct and well met, a reduction of from 1° to 2½° may be caused, with other general and local relief.

For a repetition of injections the thermal state should mainly be relied on; but, in the early stage of the process, this should also depend on the character of the washings or returning fluid. If the returning water is offensive or contains much *débris*, this fact should indicate their further necessity, and their periodical repetition until the generative tract is thoroughly cleansed and the septic or zymotic action is controlled.

Usually two or three injections daily will suffice. But where the temperature, especially the local temperature, does not fall satisfactorily, they may be repeated oftener.

The special antiseptic to be employed must be determined by the operator. I have employed, with satisfactory results, liquor sodæ chlorinatæ, largely diluted; bichloride of mercury; and also carbolic acid. The corrosive chloride of mercury, 1 to 1,000 or 1 to 2,000, is most preferred.

The injection should be abundant and at a temperature of about 100°, more or less.

For an injecting-tube I prefer a soft, smooth rubber catheter, a No. 10 or 12 (American scale), to either the Chamberlain or Lyman injecting-tubes. The soft catheter is to be preferred for its convenience, flexibility, smooth surface, and small size. The glass tubes are objectionable, because they are inflexible, and are liable, therefore, to cause unnecessary pressure or wounding; they are also unnecessarily and inconveniently large. Their great size also may render them difficult of introduction into the uterine cervix, or, if readily introduced, they may so fill the canal as to obstruct a return flow of the injected water, and particularly of bits of placenta or of placental membranes, which would otherwise be evacuated by the outflow. Being large, they require a great deal of water to fill them, which volume is less readily controlled than a smaller stream, and, therefore, may do more harm. The eye of the soft catheter being near the end and yet not in the end, it carries the stream to the uterine fundus without allowing it to impinge directly against it, and hence is not so likely to dislodge plugs from the open-mouthed vessels and cause injurious hæmorrhage.

The soft catheter is more easily cleansed and more conveniently carried about, and, lastly, is more readily introduced in the various positions a woman may be compelled to lie in. The syringe I prefer is the Davidson's. It is more convenient, and does not, like the fountain-syringe, require to be taken down to be refilled; and with it the force of the stream may be carefully graduated.

Preparatory to giving an injection, instead of bringing the woman's buttocks to the edge of the bed, the legs outside, the feet resting on chairs, I put her in Sims's position, the hips being elevated on pillows or folded blankets. This is not a difficult position to place the woman in, it does not expose her, and it admits of a ready outflow of the injected water over the thigh, which may be caught in any shallow receptacle. Having placed her in position, I introduce a speculum—a Sims's may be used if one is at hand (I use my own, a modified Sims's, which distends the vagina in four directions, is self-retaining, convenient, and affords a clear inspection of the canal and cervix)—and then, carrying the catheter as high as I desire, or see indications for, I throw in the injection with such force and for such time as the requirements demand. In this manner, illuminating the parts by reflected light with a laryngeal head-mirror, I not only see what I am doing, and the results of the washing, but I am also thereby better able to graduate the force of the stream by the effects produced. Again, by directly observing the washings, I can tell whether shreds of membrane or bits of placenta are being discharged, whether the

soiling of the washings comes from the uterus or from the vagina, and, lastly, the effect of the syringing upon local inflammatory, diphtheritic, or catarrhal conditions. The question of *admitting air* to the vagina by speculum distension, where antiseptic injections are being used, need not occupy us; no harm can result from it.

As to whether the administration of injections should be intrusted to the nurse, I should say no. A matter of so much importance can not be too carefully watched, and the necessary attention can be expected only of a responsible operator. The danger to be apprehended from causing peritonitis by intra-uterine injections of hot water when an inflammatory action is present within the womb is very slight; and if a soft catheter is used in lieu of a glass injecting-tube, and there is an opportunity afforded for the free return of the water, it may not be accounted of sufficient importance to delay the operation on that account. If, however, there is no endometrial congestive or inflammatory action, causing swelling, present (which may readily be determined by placing the thermometer within the womb), and the organ is in a lax, dilated state, then the case is altered, and injections should be administered with caution; and, when given, should contain liq. ferri persulph., or, better, tincture of iodine, which may be added to the antiseptic solution, especially if the antiseptic used is the mercuric bichloride.

Believing that the sheet-anchor of successful treatment of the puerperal, septic, or inflammatory febrile maladies lies in *properly made injections*—either vaginal or uterine, as indicated—I feel that I can not too strenuously insist upon an adoption of the manner herein set forth of giving them.

External applications, covering the abdomen, of a stimulating or sedative character, as the condition of the patient may indicate, besides imparting an agreeable warmth and promoting nutritive changes, act derivatively, and are valuable adjuncts to the intra-uterine or vaginal treatment. There is another general indication of a curative nature of value which may not be unheeded. This is to stimulate lymphatic, alterative, and excretory action, and it is fulfilled by the administration of small but frequent doses of bichloride of mercury and of iodide of potash. From the administration of the latter especially—given in one-third-of-a-grain doses, largely diluted in water, every hour—I have seen good results.

The *symptomatic indications* are to relieve pain, control fever, and sustain the strength.

For the relief of pain, morphine, given hypodermically, acts with certainty, and this is the most convenient as well as the safest method of administering that potent drug. Given by the mouth, in all maladies where digestion is sluggish—as it is likely to be in puerperal fever—morphine does not always effect prompt results, and may, from repeated doses, accumulate, and thus lead to a dangerous narcosis—which danger is all the more to be apprehended where there is present the depressed vital action which forms an early prominent feature of the puerperal febrile maladies.

But there is a further question in regard to the exhibition of opium (or its alkaloids) in puerperal fever, outside

of what constitutes the proper manner of giving it, which has to do with the soundness of the indication for its early and prominent use as a curative remedy.

From the beneficial effects of administering opium in traumatic peritonitis—evidently due to the rest afforded the affected part by its inhibitory action upon intestinal peristalsis and upon deranged nutritive processes which lead to the development of intestinal gases, as well as to its more certain anodyne action—and from its effects in idiopathic peritonitis—evidently the result of its diffusible action, in addition to those effects above noted—that drug has made such a reputation as a remedy in the peritoneal maladies that it has come to be regarded as *quite specific*, and, as such, it has been exhibited in puerperal fever.

That it has no *specific curative action* in puerperal peritoneal fever is evident from many trials, and quite as many failures, in the past, in the lying-in wards of Bellevue Hospital.

During my service in that institution in 1870 and 1871, and while in charge of the obstetric service, there were many cases of puerperal fever treated upon the *opium plan*, which was then in vogue—several of them by myself and assistants—in which morphine was administered in accordance with indications derived from the temperature, the pulse, and especially the frequency of the respirations (the latter being reduced to a semi-narcotic frequency, from observations made every two hours or oftener, day and night), and always with the same result—*death of the patient from exhaustion* in a varying number of days.

This experience—one of many in the above-named institution—clearly, to my mind, disproves any claim which may have attached to the drug as a specific in such cases.

It has already been alluded to that the action of morphine upon the nutritive functions, where an opium habit has not been established—in doses sufficiently large and frequent to affect reduction of the pulse and respirations—is inhibitory.

To the extent that it produces vital inhibitory action in puerperal peritonitis, a malady which rapidly promotes exhaustion, its use is grievously detrimental. Besides, when the treatment is pushed to the extent formerly, and possibly now, advised—of bringing the respirations down to fifteen, twelve, and, as practiced in some cases, to six, or even less, in a minute—the profound effect produced is most dangerous, as it exactly simulates extreme exhaustion, from which it can not be readily differentiated, on account of which it therefore may be unconsciously carried to a dangerous if not fatal narcotism. Again, as the effects of the drug add to the depression of exhaustion, it not infrequently promotes a dangerous result, which otherwise might not have occurred, or would not have occurred so early. From which facts, and upon general grounds, I believe morphine should be resorted to with hesitation, and its use closely watched.

It is held, however, that there is a tolerance of morphine in peritonitis, and that, therefore, large doses may be administered with safety. This tolerance can not be shown to be specific; but it is probably due to the general tolerance well recognized in all pathological states resulting from pain.

Hence, although of value as a means of allaying pain directly and of checking vermicular action of the intestines and its results, and of some benefit by its diffusible action, yet the detriment morphine works by depressing the vital functions, and the no inconsiderable danger attending its use from its liability to occasion fatal narcotism—*euthanasia*—constitute limiting indications for its employment.

I hold, therefore, that it should be administered with great care, and *only* where it is demanded by *otherwise uncontrollable pain*.

I have been led, in what has been said, to define a rational use of morphine in the treatment of the puerperal maladies: 1, because of the extent to which (advisedly) the opium treatment is resorted to in those maladies; 2, because of the greater dangers which attend such (authorized) treatment when it is not discreetly limited, especially in the depraved utero-peritoneal affections; and 3, at this time, because of the prominence given to morphine injections (hypodermic) by Dr. Thomas, who, in his paragraph 1, under Treatment, thus alludes to it: "1. As soon as a diagnosis of septicæmia (puerperal fever) is determined upon, all pain, nervous perturbation, shock, and mental anxiety, should be greeted by the hypodermic administration of ten minims of Magendie's solution of morphine, unless some special and very decided idiosyncrasy with reference to opium be ascertained to exist; and throughout the severity of the attack, when suffering of mind or body occurs (perhaps this will be about once in every six or eight hours), this should be repeated."

For reasons set forth, I would counsel that a resort to this drug should be from a secondary, rather than from a primary, consideration. I hold that the first thing to do, when the occurrence of either puerperal fever or puerperal septicæmia is suspected, from the general symptoms or from the history of a probable cause, is to clearly make out the diagnosis—both as to the site of the infecting lesion and as to its character. While these points can be presumably determined by the history, yet they should be verified by ocular, specular examination, as set forth, which should at once be made. The proper removal of a septic infecting mass, or the aseptic treatment of a contagious, inflammatory, zymotic action, should at the same time be effected. And if, after such local removal or treatment, pain is present and continues, and, furthermore, if such pain continues after external cataplasms have been applied or soothing applications have been made, and also after a diffusible medication—which is a physiological, rational method of relieving pain—has been tried, then a resort to morphine is justifiable, and its subsequent administration should only be *pro re nata*, as a *dernier ressort*.

In some cases an efficiently conducted local treatment will obviate the necessity for morphine throughout. In my experience, the occurrence of "nervous prostration, shock, and mental anxiety" is not constant in either puerperal fever or puerperal septicæmia; but, if those symptoms should be manifested, they do not in themselves indicate morphine rather than some other sedative or tonic drug. The further treatment consists in meeting the febrile indications and supporting the strength of the patient. Febrifuge medi-

cines should be such as also promote lymphatic action and secretion from the kidneys. Frequent sponging with tepid water containing a slight amount of soda, followed by inunctions of oil, cools the surface, stimulates the skin, and both refreshes and supports the patient. Antiseptic poultices—spongio-pilin may be substituted for the cataplasim—worn upon the abdomen, act beneficially. I have had no experience with the cold coil—not believing the action of prolonged cold beneficial in febrile conditions except where such are due to local traumatism—and therefore can not speak further upon that point. Quinine, as a tonic in small doses, acts beneficially. Much good results from a carefully administered diet, which, I believe, is best made up of beef-tea, milk—which is often not digestible unless peptonized, especially after any considerable febrile action has been present—animal broths, gruel made with milk and water, and cod-liver-oil emulsionized by thorough trituration with pancreatin or some other ferment. The stomach, however, should not be overloaded, and a scanty, well-chosen quantity will often afford more sustenance than a larger amount not readily digested. It should not be forgotten that the gastric function is profoundly affected in these maladies from pressure, from contiguity of morbid action, and from the depression of the sympathetic nervous function; and the question of food should be managed accordingly.

Attention to the bladder should not be omitted, and, where the catheter is required, the soft, male rubber instrument will be found more convenient than the female catheter made of silver. The soft catheter is as readily introduced, and with it the water can be discharged into a receptacle at the side of the woman, which gives her less annoyance and trouble than where such receptacle must be placed between and under the thighs.

A DISPENSARY DRESSING FOR ULCERS OF THE LEG.

By F. BARQUHAR CURTIS, M.D.

At the Out-patient Department of the Chambers Street Hospital we have lately found a very convenient dressing for ulcers of the leg in Lister's boric-acid dressing applied with a crinoline bandage. Its advantages are: (1) firm and lasting support, even enabling patients to work; (2) asepis, and non-disturbance of the part; (3) economy of time to both surgeon and patient; (4) economy of material, one dressing costing but little more than any ordinary dressing and bandage, and lasting three times as long.

The mode of application is as follows: The leg and foot are thoroughly washed with a 1-to-40 carbolic-acid (or 1-to-1,000 corrosive-sublimate) solution, and the ulcer itself is washed with a saturated solution of boric acid. Over the ulcer is put a piece of thin gutta-percha tissue (as a substitute for the Lister macintosh), large enough to extend about one fourth of an inch beyond its edges on all sides, which has been soaking for some minutes in the boric-acid solution. The leg is wiped dry, sufficient borated or salicylated cotton to take up the discharge is laid over the ulcer, and the rest of the leg from the ankle to the knee is wrapped

in a half-inch layer of cotton batting. An ordinary bandage is applied to the foot.

The crinoline bandage (three inches wide, ten to twelve yards long) has meanwhile been soaking for five minutes in water, and it is now squeezed quite dry and snugly applied over the cotton from the ankle to the knee, making a thickness of three or four layers. Care must be taken to have the cotton project beyond both its upper and lower edges, as they may excoriate the skin when dry and stiff. In half an hour the crinoline will be dry; but, if time is important, an ordinary bandage may be applied outside of the crinoline, and the patient dismissed at once.

We direct our patients to return in a week; but to come at once if they should have any pain, or if the discharge from the ulcer should come through the dressing. But the dressing can be worn for much longer than a week, as shown by the following cases:

CASE I.—Timothy F., aged forty years, laborer.

February 8th.—Four or five months ago patient received an injury to his leg, causing an ulcer, which was healed, but has returned. He is in fair general condition. On the anterior surface of the middle third of the left leg is a circular ulcer $2\frac{1}{2}$ inches in diameter. The base is dark red, granulating, level with the surface of the skin; the edges are flat, but without cicatricial action; the discharge is abundant and purulent.

Apply the boric dressing described above with an ordinary bandage.

26th.—Ulcer now $2 \times 1\frac{1}{4}$ inch. Base paler, discharge less, edges cicatrizing. Has been dressed several times. Redress, but with the crinoline bandage as described above.

March 5th, 12th, and 19th.—Redressed.

April 3d.—Dressing untouched for fifteen days. Ulcer now 1 inch in diameter. No sign of irritation of surrounding skin. Redress.

25th.—Redressed on 16th. Now ulcer is entirely healed.

CASE II.—James McC., aged thirty-five years, deck hand.

March 26th.—Two weeks ago patient received a blow on the shin. Now on anterior surface of leg, above the middle, is a black slough 2×1 inch, firmly adherent. His general condition is good. Apply 1-to-40 carbolic-acid compresses until slough separates.

April 3d.—Slough has fallen, leaving an oval, concave, 2×1 inch ulcer. Apply regular boric-acid and crinoline dressing.

11th and 22d.—Redressed.

March 27th.—Dressing has been worn for thirty-five days without discomfort; patient at work on a steamboat! Ulcer entirely healed.

The chief risk in leaving the dressing longer than a week is the liability to set up eczema, which may be quite obstinate, as in the following case:

CASE III.—Thomas M., aged thirty-nine years, cooper.

May 16th.—Has had varicose veins for a long time, and, occasionally, ulcers. The present ulcers have lasted for two weeks. There are three ulcers $\frac{1}{2}$ inch deep, $\frac{1}{2}$ inch in diameter; and six superficial ones $\frac{1}{2}$ inch in diameter. Apply regular boric-acid and crinoline dressing.

23d.—Ulcers improved, but the skin about them is eczematous. Apply iodoform and ung. zinci oxidi.

June 4th.—Redressed every other day. The eczema has disappeared, the ulcers have improved.

Usually there is no pain, and many patients are even able to work and to walk. But in two of our cases the

dressing was not well borne, causing pain for some unknown reason. We give their histories:

CASE IV.—William B., aged thirty-nine years, restaurant.

March 25th.—Has had varicose veins for years, being on his feet over twelve hours a day. He is stout, and his health is good. On the anterior surface of the inferior third of the right leg is an ulcer $\frac{1}{2}$ inch in diameter, $\frac{1}{4}$ inch deep; the base granulating, but dark colored; the surrounding skin pigmented. Apply iodoform powder to ulcer, ung. zinci oxidi over it, absorbent cotton, and regular crinoline bandage.

27th.—Bandage began to pain last night. Remove and apply regular boric-acid and crinoline dressing.

29th.—Bandage again painful. Base of ulcer now level with the skin. Skin somewhat eczematous, and exquisitely sensitive. Apply ung. belladonnæ and ordinary bandage.

31st.—Pain continues. Dress with iodoform and ung. zinci oxidi.

May 14th.—Patient was unable to attend, and has treated himself—with oxide-of-zinc ointment. The ulcer is about the same as when first seen, and very sensitive. Much pain about the ankle.

CASE V.—Matthew D., aged thirty-five years, blacksmith.

February 29th.—Was kicked on the shin February 20th. Now on right leg, anterior surface of middle third, is a superficial ulcer, very sensitive, not granulating. Patient is a rather poorly nourished man, tall, and of large frame. Apply iodoform and ung. zinci oxidi.

March 13th.—Patient irregular in attendance; the treatment remains the same. To-day apply regular boric-acid dressing with ordinary bandage.

17th.—To-day apply the same with crinoline bandage.

19th.—Patient, who walks about all day, has much pain in the ulcer, and thinks the bandage too tight. Redress, putting on the bandage as loosely as practicable. The ulcer is looking well, now $1 \times \frac{3}{4}$ inch.

22d.—The pain and feeling of tightness returned in forty-eight hours. Remove dressing, and apply boric-acid dressing with ordinary bandage.

24th.—Redress; no pain; ulcer looks well.

April 3d.—Patient not seen until to-day. The ulcer has relapsed.

Other dressings may be used with the crinoline bandage. Syphilitic ulcerations do very well with a simple iodoform dressing. Balsam of Peru and other stimulants may be applied, exuberant granulations cauterized, or the ulcers strapped.

The following cases are added to illustrate the methods of treatment and the results:

CASE VI.—Patrick McC., aged forty-four years, laborer.

March 17th.—Has large varicose veins in leg, and a typical varicose ulcer $\frac{1}{2}$ inch in diameter. Wash leg with 1-to-40 carbolic-acid solution, apply balsam of Peru to ulcer, cover it with absorbent cotton, and apply regular crinoline bandage.

25th.—Patient has had no discomfort. Ulcer is entirely healed.

CASE VII.—Thomas McC., aged thirty-one years, truckman.

March 19th.—Has had varicose veins in leg for years. Present ulcer has been of this size for three months. His general health is excellent. On external surface of middle third of left leg is an oval ulcer $1\frac{1}{2} \times \frac{3}{4}$ inch. The edges, rather sharp-cut, rise $\frac{1}{4}$ inch above the base of the ulcer, but are level with the skin; they show no cicatricial action. The surrounding skin is pigmented and bluish. The dark-colored base is covered with

small, torpid granulations. The discharge is abundant and purulent. Apply regular boric-acid and crinoline dressing.

31st.—Has had pain for some days, but did not come. The ulcer is now level with the skin, granulating nicely; but the surrounding skin for 2 inches from the ulcer is eczematous. Apply iodoform and ung. zinci oxidi.

April 2d.—Eczema cured. Apply regular boric-acid and crinoline dressing.

21st.—Redressed on the 9th. Ulcer now closed, except a superficial spot $\frac{1}{4}$ inch in diameter. Redress. Patient did not return.

CASE VIII.—Grace L., aged sixteen (?) years, umbrella-maker.

January 31st.—General health good. Time of syphilitic infection unknown. Two "lumps" formed on her leg "from a blow" two years ago, and five months ago they "broke." Now on middle third of leg over the crest of the tibia are two nodes, apparently arising from the periosteum. The nodes are $1\frac{1}{2}$ to 2 inches in diameter, and rise quite abruptly $\frac{1}{4}$ inch above the general surface. Each node is surmounted by an ulcer 1 inch in diameter, its edges sharp-cut, somewhat undermined, without any inflammatory areola; its base is covered with a whitish adherent layer, and is $\frac{1}{4}$ inch below the edges, but is convex in the middle, the skin having ulcerated over the tumor projecting beneath it. The discharge is watery. The nodes are very painful and sensitive. Ordered: R Hydrarg. bichlor., gr. $\frac{1}{16}$; potass. iodid., gr. v, t. i. d. Apply iodoform and ung. zinci oxidi to ulcers.

February 6th.—Redressed every other day. Surface of ulcers cleaner, nodes smaller. Redress with crinoline bandage.

March 10th.—Has been redressed once a week. Ulcers now $\frac{1}{2}$ inch in diameter, bases level with skin, and granulating; only a slight diffuse swelling is left of the nodes. Ulcers strapped with adhesive plaster. Not seen again.

Book Notices.

Clinical Lectures on Mental Diseases. By T. S. Clouston, M. D. Edin., F. R. C. P. E., Physician Superintendent of the Royal Edinburgh Asylum for the Insane, etc. To which is added an Abstract of the Statutes of the United States and of the Several States and Territories relating to the Custody of the Insane. By CHARLES F. FOLSOM, M. D., etc. Philadelphia: Henry C. Lea's Son & Co., 1884. Pp. xxiv-33 to 550, inclusive.

The author of this work has long been identified with psychological science in Scotland, and both in his capacity as superintendent of the Royal Edinburgh Asylum for the Insane, and as a former co-editor of the "Journal of Mental Science," has done much for the advancement of the important department of medicine to which so many years of his life have been devoted.

The present work requires no apology; it is written in a clear and lucid manner, and with the evident intention of imparting rather the practical points of the subject than obscure and mooted points in anatomy and pathology. To the student or practitioner who is desirous of acquiring a knowledge of mental disorders and their treatment, but who at the same time is deprived of the opportunities for direct observation afforded by asylums and hospitals for the insane, the book will prove most valuable, embodying as it does not only lucid clinical descriptions, but also an ample array of carefully selected cases.

In many works which pretend to give a systematic clinical history of mental disorders there is often a manifest striving after startling effects, which finds expression in the recital of anomalous and rare cases, which, however interesting in themselves, do not render the descriptions of individual forms of disease more vivid or complete.

We note with pleasure that Dr. Clouston has not fallen into this psychological error. When cases are presented he has been at evident pains to select only such as serve to establish the morphological entity of the particular disease under consideration. As a result of this conservative policy, the mind of the reader is not encumbered with a series of mental monstrosities, but, on the contrary, each morbid type stands forth with a vividness appropriate to its importance. Such a method of writing is both philosophical and practical, and proves beyond question that the author is not only a sturdy thinker, but an accomplished book-maker as well.

BOOKS AND PAMPHLETS RECEIVED.

Lectures on the Principles of Surgery, delivered at Bellevue Hospital Medical College. By W. H. Van Buren, M. D., LL. D. (Yalen.), formerly Professor of the Principles and Practice of Surgery in the Bellevue Hospital Medical College, etc. Edited by Lewis A. Stimson, M. D., Professor of Physiology and Clinical Surgery in the Medical Department of the University of the City of New York. New York: D. Appleton & Co., 1884. Pp. vii-588. [Price, cloth, \$4; sheep, \$5.]

Manual of Chemistry. A Guide to Lectures and Laboratory Work for Beginners in Chemistry. A Text-book specially adapted for Students of Pharmacy and Medicine. By W. Simon, Ph. D., M. D., Professor of Chemistry and Toxicology in the College of Physicians and Surgeons, etc., Baltimore. With Sixteen Illustrations on Wood and Seven Colored Plates, representing Fifty-six Chemical Reactions. Philadelphia: Henry C. Lea's Son & Co., 1884. Pp. 411.

The Elements of Physiological and Pathological Chemistry. A Handbook for Medical Students and Practitioners. Containing a General Account of Nutrition, Foods, and Digestion, and the Chemistry of the Tissues, Organs, Secretions, and Excretions of the Body in Health and Disease; together with the Methods for preparing or separating their Chief Constituents, as also for their Examination in Detail, and an Outline Syllabus of a Practical Course of Instruction for Students. By T. Cranstoun Charles, M. D., Fellow of the Chemical Society and of the Royal Medical and Chirurgical and Pathological Societies, etc. Illustrated with Thirty-eight Engravings on Wood and a Chromolithograph. Philadelphia: Henry C. Lea's Son & Co., 1884. Pp. 463.

The Science and Art of Surgery. A Treatise on Surgical Injuries, Diseases, and Operations. By John Eric Erichsen, F. R. S., LL. D., F. R. C. S., Surgeon Extraordinary to Her Majesty the Queen, etc. Eighth Edition, revised and edited by Marcus Beck, M. S., and M. B. Lond., F. R. C. S., Surgeon to University College Hospital, etc. With Nine Hundred and Eighty-four Engravings on Wood. Vol. I. Philadelphia: Henry C. Lea's Son & Co., 1884. Pp. 1,124.

Medical Rhymes. A Collection, etc., selected and compiled from a Variety of Sources. By Hugo Erichsen, M. D., Professor of Neurology in the Quincy School of Medicine, etc. With an Introduction by Professor Willis P. King, M. D., Sedalia, Mo. Illustrated. St. Louis, Chicago, and Atlanta: J. H. Chambers & Co., 1884. Pp. xx-220.

Report of the Commissioner of Education, for the Year 1882-'83. Washington: Government Printing-Office, 1884. Pp. cccxiii-872.

Lectures on Diseases of the Rectum, delivered at the Medical Department of the University of the City of New York. By J. Williston Wright, M. D., Professor of Surgery. New York: Bermingham & Co., 1884. Pp. 170. [Price, \$1.25.]

Medical Diagnosis. A Manual of Clinical Methods. By J. Graham Brown, M. D., Fellow of the Royal College of Physicians of Edinburgh, etc. Second Edition, Illustrated. New York: Bermingham & Co., 1884. Pp. 285.

The Principles and Practice of Midwifery, with Some of the Diseases of Women. By Alexander Milne, M. D., Ex-Vice-President, Edinburgh Obstetrical Society, etc. Illustrated with Numerous Wood Engravings. Second Edition. New York: Bermingham & Co., 1884. Pp. 371. [Price, \$2.]

Diseases of the Nose. By Clinton Wagner, M. D., Professor of the Diseases of the Nose and Throat in the New York Post-Graduate Medical School, etc. With Illustrations of Instruments and Pathological Conditions. New York: Bermingham & Co., 1884. Pp. 252. [Price, \$2.50.]

A Manual of Dermatology. By A. R. Robinson, M. B., L. R. C. P. & S., Edin., Professor of Dermatology at the New York Polyclinic, etc. New York: Bermingham & Co., 1884. Pp. 647. [Price, \$5.]

London Water Supply. Report, etc., No. xlv.

The Medical Record Visiting List, or Physicians' Diary, for 1885. New York: William Wood & Co.

A Contribution to the Clinical Study of Rötheln, or German Measles. By W. A. Edwards, M. D., etc. [Reprint from the "American Journal of the Medical Sciences."]

On Branchial Cysts of the Neck. By N. Senn, M. D., Milwaukee, Wis. [Reprint from the "Journal of the American Medical Association."]

New York State Medical Association. Constitution and By-Laws, adopted 1884.

Minutes of a Convention held in the City of Albany, February 4 and 6, 1884, at which the New York State Medical Association was organized on a Permanent Basis.

Catalogue of Members of the Medical Profession in the State of New York, showing their Vote on the Codes of Ethics. Corrected Edition. Published by the Central Organization of the New York State Medical Association to uphold the National Code of Ethics.

New York County Medical Association. By-Laws, adopted January 14, 1884.

Annual Report of Marc Livingston, M. D., Coroner of the City and County of San Francisco, for the Fiscal Year ending June 30, 1884.

Kentucky School of Medicine. Twenty-ninth Annual Announcement, Session of 1885.

Announcement of the Regular Session of 1885 of the Hospital College of Medicine, Medical Department of Central University, Louisville, Ky.

Explanation of the Pathology and Therapeutics of the Diseases of the Nerve Centers, especially Epilepsy. By J. McF. Gaston, M. D., Atlanta, Ga. [Advance sheets from the "Transactions of the Medical Association of Georgia."]

The Sheltering Arms. Twentieth Annual Report, New York, 1884.

Annual Report of the Secretary of the Navy for the Year 1883. In two volumes. Volume II. Sanitary and Statistical Report of the Surgeon-General of the Navy for the Year 1882. Washington: Government Printing Office, 1884.

Disorders Mistaken for Hydrophobia. By Charles W. Dulles, M. D., etc. [Extracted from the "Transactions of the Medical Society of the State of Pennsylvania," for 1884.]

Mental Contagion in Inebriety—a Psychological Study. By T. D. Crothers, M. D., Hartford, Conn.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.

Published by
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Edited by
FRANK P. FORSTER, M. D.

NEW YORK, SATURDAY, NOVEMBER 8, 1884.

AMERICAN PRACTICE IN ABDOMINAL SURGERY.

If we are ever to see the last of the comparatively unfavorable results of laparotomy in this country, it must be by means of efforts guided by something approaching certain knowledge of the cause or causes of our present shortcomings. It looks as if those causes were even now within the ken of a few of our most experienced operators, but it is quite certain that there is nothing like a general recognition of them, or even a concerted search for them. Suggestions are made now and then, to be sure, but for the most part they are promptly shown to be groundless. It is manifest, for instance, that Mr. Lawson Tait shot wide of the mark in his clinical lecture to the students at Bellevue Hospital some weeks ago, which we published in our issue of October 18th. It will be remembered that on that occasion Mr. Tait could suggest no other reason for our bad showing than the fact that there were too many men engaged in the work. No doubt that is "an o'er true tale," and it might go far toward explaining the tenor of our total statistics, but it is quite obvious that it counts for nothing as an explanation of the fact that our leading operators—men who are no novices in abdominal surgery, and whose technical skill is beyond question—fall behind the best-known laparotomists of Great Britain.

We are not at all sure that something very like the reverse of Mr. Tait's reason may not lie at the root of our unsatisfactory figures. Not that we have any idea that there are too few American surgeons who essay laparotomy, for we agree decidedly with Mr. Tait that there are too many; but we will put it a little differently, and say that there are too few localities, and those localities too close together, where men skilled in abdominal surgery are to be found. Except for the brilliant achievements of a few men in limited spheres, it is to the surgeons of the Woman's Hospital that the sufferers with ovarian tumor have looked as the ministers of their last desperate chance of relief. There is nothing strange in this; it was in this city that the gynecology of the present day practically had its birth, and for several years ours was the only hospital in the world devoted wholly to the treatment of the diseases peculiar to women. Consequently, New York has been the place to which women with ovarian tumors have resorted, whether they lived three miles away or three thousand. It is easy to understand that those who were compelled to come a great distance were prone to put off the evil day as long as possible, being treated in the mean time by palliative measures which, especially tapping, only tended to reduce their chances in the end. This amounts to saying—what we said on a former occasion—that our surgeons have had to battle against an undue proportion of bad cases. That this is a fact there can be no question. Most

of our New York ovariologists are familiar with the work of their European brethren by repeated and continuous observation, and it is their decided conviction that nowhere else are so many unpromising cases seen as at the Woman's Hospital.

If there is any truth in these reflections—and we are convinced that they embody a most weighty truth—it will be a happy day for American ovariologists when it can be said that the services of an experienced operator are within easy reach of every woman. Patients will then more generally subject themselves to operation early, because they can do so at comparatively little sacrifice, and our New York surgeons, no longer handicapped with so many desperate cases, will be enabled to make a record more truly expressive of their capabilities. That that day is not far distant there is reason to hope from such experiences as Dr. Sutton, of Pittsburgh, was able to relate at the recent meeting of the American Academy of Medicine, a report of which will be found in this issue of the journal. So impressed is Dr. Sutton with the danger of tapping that he suggests a means of putting a stop to the practice which must certainly be called radical—that of a general refusal on the part of surgeons to operate on patients who have been subjected to tapping. However justifiable such a refusal might be from a theoretical point of view, we take it for granted that in his practice Dr. Sutton, like other American ovariologists, never denies a patient the slight chance of relief that the operation may hold out, no matter how likely her case may be to spoil his statistics. That is the only conscientious course to pursue, even at the risk of continuing our relatively unfavorable results.

FEMALE INTERNES IN THE PARIS HOSPITALS.

THE question of the admission of women to the *interne* is just now agitating some of our brethren in Paris, and the "Gazette hebdomadaire" publishes a letter on the subject which is rather entertaining. The writer makes a strong stand against the despised sex. He reviews the arguments (if a series of disconnected statements can be called arguments), and then indulges in a lofty flight of imagination, picturing the dreadful effects of the slightest concession to feminine appeals. Some of his objections to female house officers are amusing. First comes the moral argument; mention is made of the countless "inconveniences" that would result to the visiting staff from the introduction of *un démon tentateur* into their wards. It strikes us that this is an unwarranted reflection on the moral stamina of the prominent members of the Paris profession. Again, the fear is expressed that, since the *interne* is placed in most intimate relations with his superior, the latter "could not see without a certain embarrassment a young woman attached to his steps, desirous of following him everywhere, of rendering to him in every case, and on every occasion, the assistance which a faithful *interne* owes to his affectionate master." What peculiar occupations French *internes* may have, over and above their professional work, we do not know, but, at all events, it would be cruel for any young woman to embarrass her chief in the line of duty.

The objection is seriously urged that "the patients them-

selves would suffer during the female *internat*." This assertion is not supported with explanations, but is assumed to be incontrovertible. The cruel position of a "bearded *externe*," when subjected to the tyranny of a "blonde *interne*," is feelingly alluded to. Of course this argument is beyond appeal. But the home-thrust is contained in the remarkable statement that no woman could hold such a position, because the performance of her menstrual function would incapacitate her for continuous work. The idea does not seem to have occurred to the writer that the same objection might hold good in the case of the nurses, whose duties are scarcely less severe and unremitting than those of the house staff.

We have little further comment to make on this flippancy treatment of an important question, and it is not our intention to enter upon a discussion of the fitness of women to study and practice medicine under the same conditions that are imposed upon men. That the writer in question has treated the subject from a low standpoint is undeniable; but, since he has chosen to consider its moral and sentimental aspects, it is a pity that he has not displayed more of that chivalry, if not respect, for the other sex which marks at least the outward conduct of his countrymen. He is an alarmist of the most pronounced type. "*Cet interne en corsage*," he remarks satirically, "*s'il se montre supérieur, vous en ferez, j'espère, un chef de clinique*." He traces the course of the daring girl as she rises step by step, and finally knocks audaciously at the portals of the sacred *Académie*. Then, in his grand climax of irony, he raises her to the Senate itself; "and this," he says, "is how the great question of the emancipation of woman is entirely contained within this little egg of the *internat des hôpitaux*."

Although prepared, by our own political experience, to sympathize with the writer in this latter fear, we do not look for quite such a sequence in his country. At any rate, the experiment is not so dangerous as not to be worth trying, and, for our part, we should not be sorry to see it made, at least on a limited scale. There is ample room for improvement in the condition of French women, and, if they have the courage and the ability to attain to an honorable position in the medical profession, Heaven forbid that they should be opposed for such trivial reasons as those set forth by this writer.

MINOR PARAGRAPHS.

THE RHINELANDER LUNACY CASE.

RECORDER SMYTH, of the Court of General Sessions, has decided that William O. Rhinelanders is sane and must plead to the indictment charging him with a murderous assault on Mr. John Drake, at his office, in Cedar Street, last June. The decision in this case has been awaited with a good deal of interest for many reasons. It will be remembered that Rhinelanders himself has asserted from the beginning that he was entirely sane, and that the allegation that he was insane was made by his family, with whom he was not on good terms, in order to avoid the disgrace of a criminal trial. When the statement was made, shortly after the shooting, that he was insane, the Recorder appointed a commission, consisting of Dr. William Detmold, Mr. Patterson, and Mr. Nolan, to examine into the matter and report to the Court.

After a very exhaustive examination, one of the commissioners (Mr. Patterson) reported that the man was sane, and the two others (Dr. Detmold and Mr. Nolan), that he was insane. Upon this latter report a motion was made to commit Rhinelanders to a lunatic asylum. This motion Recorder Smyth has just denied, holding that, under a proper construction of the Code of Criminal Procedure, the report is only for the information of the Court, and can be adopted or dismissed. Having asserted this liberty of choice, he accepts the report of the single commissioner, Patterson, and adjudges Rhinelanders to be sane. As a result, the latter has just been admitted to bail in the sum of \$10,000, and the trial will be had in a short time.

The whole proceeding is mainly of interest as showing the advantages of the new method over the old one in trying issues of insanity. Formerly they were decided when the prisoner was on trial, and so many other points were always involved that the issue of insanity did not receive the careful scientific attention it deserved. Under the new code, no question as to the alleged criminal's sanity can be raised on the trial, but must be decided by itself before he is called upon to plead to the indictment. Recorder Smyth is quite contemptuous in his criticisms of the expert testimony adduced, his words being as follows: "I agree with the learned commissioner, Patterson, that the expert evidence is of no value in this investigation. While the physicians called by the people to sustain the allegation of insanity say that the defendant is insane, they differ radically among themselves as to the classification of that alleged insanity. Two say that he has general paresis; one says that he is an imbecile; and another that he suffers from melancholia. He can not have all these conditions at one and the same time; insanity in its initial stages and in its progressed stages can not coexist in the same person. . . . There is a singular deficiency of evidence of positive facts indicating insanity, and, as the learned Dr. Detmold says, in his opinion, the expert evidence is 'rather weak.' The record before me fully justifies the conclusion of Commissioner Patterson, 'that the defendant is a nervous, impulsive, and self-willed person.'"

NEWS ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending November 4, 1884:

DISEASES.	Week ending Oct. 28.		Week ending Nov. 4.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid Fever.....	60	11	41	22
Scarlet Fever.....	31	4	33	1
Cerebro-spinal meningitis....	4	4	3	3
Measles.....	41	3	52	10
Diphtheria.....	45	28	63	36

The West Virginia Medical Practice Act.—On the 1st inst. the Court of Appeals of West Virginia delivered its opinion that the law regulating the practice of medicine and surgery was constitutional and valid. This decision, we are glad to say, at once places the State Board of Health on substantial legal ground.

The Chicago Gynecological Society held its annual meeting on the 31st of October, at the house of the retiring president, Dr. A. Reeves Jackson, who, in accordance with long-established custom, entertained the members with an elaborate banquet. The following-named gentleman were elected officers for the ensuing year: Dr. H. P. Merriman, president; Dr. E. C. Dudley, first vice-president; Dr. Charles Warrington Earle, second vice-president; Dr. Edward Warren Sawyer, secretary

and treasurer; and Dr. W. W. Jaggard, editor. After an appropriate address by the retiring president, the society adjourned, to meet on Friday, November 21st, when a discussion on "The Premature Expulsion of the Ovum" will be opened by Dr. Edward Warren Sawyer.

The Health of the State of New York.—By the monthly bulletin issued by the State Board of Health, covering the month of September, we learn that the total reported mortality for the month was 6,947. The percentage of infant mortality was 43.2, of that from diarrhoeal diseases 21.2, of that from croup and diphtheria 3.2, of that from typhoid fever 2.3, of that from acute respiratory diseases 6.7, and of that from consumption 12.5. About half the entire mortality was reported from the four cities of New York, Brooklyn, Rochester, and Albany, having an aggregate population of 2,200,000. They showed an infant mortality of about 48 per cent. The returns from Buffalo and Watertown, as well as those from many of the larger villages, had not been received.

A Sanitary Convention will be held at East Saginaw, Mich., on Tuesday and Wednesday, December 2d and 3d, under the auspices of the State Board of Health. The objects of the convention are stated to be the presentation of facts, the comparison of views, and the discussion of methods relating to the prevention of sickness and death, together with the improvement of the condition of the living. An invitation is especially extended to health officers to be present and take part in the discussions. The Michigan board must certainly be doing an excellent work in thus providing for the instruction of local sanitary officers and the people at large in matters relating to the public health.

Changes in the Canadian Faculties.—The "Canadian Practitioner" announces that Dr. Carson has been appointed lecturer on botany in the Woman's Medical College of Toronto, and that Mr. Thomas McKenzie, B.A., has been appointed lecturer on botany and zoology in the Toronto School of Medicine, in place of Mr. H. Montgomery, who is now in Dakota.

The Brooklyn City Hospital Training School for Nurses held its third annual commencement Tuesday evening, October 28th, when diplomas were awarded to eleven graduates. Dr. Alexander Hutchins delivered an excellent address to the graduating class.

The Bridgeport Hospital will be inaugurated on Tuesday, the 11th inst. The order of exercises issued by the Committee of Arrangements includes an address by Dr. D. B. St. John Roosa, of New York.

The Sanitation of Naples, according to the "Medical Times and Gazette," is to be prosecuted vigorously. A wide street is to be carried through the most perilous quarters, and new accommodations are to be provided for the operatives. The destruction of houses found to be insanitary, as well as that of wells and cisterns, is promised, and it is to be the duty of the municipality to see to it that none but pure water is used.

The Death of Dr. Edward F. Arnoux, of Fort Lee, N. J., is announced to have taken place on Wednesday, October 29th. Dr. Arnoux was a graduate of the old New York Medical College, of the class of 1855.

The Alumni Association of the College of Physicians and Surgeons.—At a recent meeting of the Councilors, suitable resolutions were adopted expressing the thanks of the association to Mr. Vanderbilt for his gift to the college, and measures were suggested for supplementing the endowment with additional funds to be devoted to special purposes.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from October 26, 1884, to November 1, 1884:*

ALDEN, C. H., Major and Surgeon. In addition to his duties at Fort Snelling, Minn., to perform the duty of attending surgeon at Department Headquarters. S. O. 127, Headquarters Department of Dakota, October 23, 1884.

TOWN, F. L., Major and Surgeon. Assigned to temporary duty as post surgeon, Fort Clark, Texas. S. O. 145, Department of Texas, October 27, 1884.

BENTLEY, EDWIN, Major and Surgeon. To be relieved from duty at Fort Clark, Texas. S. O. 145, Department of Texas, October 27, 1884.

WILSON, W. J., Captain and Assistant Surgeon. Assigned to temporary duty at Fort Trumbull, Conn. S. O. 220, Department of the East, October 27, 1884.

CORBUSIER, W. H., Captain and Assistant Surgeon. Assigned to duty at Fort Bowie, Arizona Territory. S. O. 99, Department of Arizona, October 23, 1884.

LA GARDE, L. A., Captain and Assistant Surgeon. Assigned to duty at Fort Ellis, Montana Territory, relieving First Lieutenant G. E. Bushnell, Assistant Surgeon, U. S. A., who, upon being relieved, will report for duty at Fort Snelling, Minn. S. O. 126, Department of Dakota, October 22, 1884.

EVERTS, EDWARD, First Lieutenant and Assistant Surgeon. Leave of absence extended one month. S. O. 107, Headquarters Division of the Pacific, October 21, 1884.

McCaw, WALTER D., First Lieutenant and Assistant Surgeon. Ordered from Fort Craig, New Mexico, to Fort Wingate, New Mexico, for duty. S. O. 92, Headquarters District of New Mexico, October 21, 1884.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending November 1, 1884:*

BEARDSLEY, GROVE S., Surgeon. To Washington, D. C., for examination preliminary to promotion and as to qualifications for sea duty, October 31, 1884.

CRAIG, THOMAS C., Passed Assistant Surgeon. Ordered to the Alliance for temporary duty, October 31, 1884.

GARDNER, JAMES E., Passed Assistant Surgeon. Ordered to the Naval Hospital, Norfolk, Va., October 28, 1884.

HALL, JOHN H., Passed Assistant Surgeon. Relieved from the Naval Hospital, New York, and ordered to the Navy-Yard, Mare Island, Cal., October 29, 1884.

HORD, WILLIAM T., Medical Director. To continue duty as member of the Retiring Board until January 1, 1885. October 27, 1884.

LOVERING, P. A., Passed Assistant Surgeon. Ordered to the Naval Dispensary, Washington, D. C., for temporary duty, October 27, 1884.

TURNER, THOMAS J., Medical Director. To continue duty as member of the Retiring Board until January 1, 1885. October 27, 1884.

STEELE, JOHN M., Passed Assistant Surgeon. Ordered to the Naval Hospital, New York, October 29, 1884.

Society Meetings for the Coming Week:

MONDAY, November 10th: New York Ophthalmological Society (private); New York Medico-Historical Society (private); Chicago Medical Society; Boston Society for Medical Improvement; Gynecological Society of Boston; Burlington, Vt., Medical and Surgical Club (annual); Norwalk, Conn., Medical Society (private).

TUESDAY, November 11th: New York Surgical Society; New York Medical Union (private); Medical Societies of the

Counties of Rensselaer and Ulster, N. Y., Camden, N. J., and Fairfield, Conn. (Bridgeport); Newark, N. J., Medical Association (private); Trenton, N. J., Medical Association (private); Norfolk District, Mass., Medical Society (Hyde Park); Penobscot County, Me., Medical Society (Bangor).

WEDNESDAY, November 12th: New York Pathological Society; American Microscopical Society of the City of New York; New York Medico-Legal Society; Medical Society of the County of Cayuga, N. Y.; Worcester, Mass., District Medical Society; Pittsfield, Mass., Medical Association (private).

THURSDAY, November 13th: Harlem Medical Association; Society of Medical Jurisprudence and State Medicine; Brooklyn Pathological Society; South Boston, Mass., Medical Club (annual—private).

FRIDAY, November 14th: Yorkville Medical Association (private); Medical Society of the Town of Saugerties, N. Y.

Letters to the Editor.

A CASE OF REFLEX PARALYSIS.

SULPHUR SPRINGS, TEXAS, September 22, 1884.

To the Editor of the *New York Medical Journal*:

SIR: On the 17th inst., early in the evening, I was called hurriedly to see Alice, a girl of about thirteen years, who lives just across the street from me, and found her sitting in a chair, with her hands and feet cold, and the tongue twisted, in the shape of a corkscrew, to the left, and protruding from the mouth. She was unable to articulate distinctly, the pupils were somewhat dilated, and the history was that she had been well up to the moment the paralysis of the tongue came. She had eaten an ordinary dinner, in the evening she ate an apple, and, about ten or fifteen minutes before she was taken, several pieces of candy, commonly called gum-drops, colored red. Her pulse ran down so low that she looked as if she would die in a few minutes. Thinking that it was a case of poisoning, I gave an emetic of mustard in warm water, and caused her to drink copiously of warm water until free emesis followed, when, by the use of a sinapism to the spine, she reacted very well, the pupils responded to light, and to all intents she seemed well and rational, with the exception of the tongue, which continued twisted as badly as ever, but gave no inconvenience except in swallowing solid food. I will say that, in vomiting, she threw up her dinner, still undigested, with the apples and candy. I gave ten grains of calomel, and followed it in two hours with castor-oil. Was this paralysis of the hypoglossal nerve, caused by reflex action resulting from a torpid liver? I forgot to state that the bowels had not moved in twenty-four hours prior to the time she was taken. On the morning of the 13th I repeated the calomel, which did not act until the 20th, at twelve o'clock, when the paralysis gave way, but with the disposition remaining to twist when the tongue was protruded precipitately. This morning the paralysis has entirely subsided, and she seems as well as ever. I will say, in conclusion, that Dr. Doney and Dr. Dial saw the case with me, and agree with me in this, that they never saw or heard of anything similar to it before. I can find no literature that satisfies me on the subject. If this is worth anything to the profession, and you see proper, you can publish the same.

Yours truly,

J. M. HOOPER, M. D.

P. S.—She menstruated for the first time just one week prior to the date of this attack. She had no inconvenience whatever attending it.

Proceedings of Societies.

AMERICAN ACADEMY OF MEDICINE.

Ninth Annual Meeting, held in Baltimore, Tuesday and Wednesday, October 28 and 29, 1884.

The President, Dr. BENJAMIN LEE, of Philadelphia, in the chair.

Tuesday's Proceedings.

THE meeting was called to order in the afternoon, at Johns Hopkins Hall, and the proceedings were opened with a prayer by the Rev. J. E. GRAMMAR, D. D.

The minutes of the last meeting and the report of the Council were read and approved. Forty-one new members were elected, and a Committee on Nominations was appointed.

The Relation of the Medical Colleges to Preliminary Education was the title of a paper by Dr. PETER D. KEYSER, of Philadelphia, who analyzed the Report on Medical Colleges as given in the Fifth Annual Report of the State Board of Health of Illinois, and concluded that but few of the ninety-one medical colleges actually insisted upon any definite knowledge of the students' preliminary training before entering upon the study of medicine.

The Examination of Applicants for License to Practice a Means of raising the Standard of Medical Education was the title of the next paper, read by Dr. EDWARD JACKSON, of Philadelphia, who advocated the necessity of an independent board of examiners, whose certificate would be the only credential necessary for practicing. By this means the demand upon the colleges would be for men who would be able to pass the State examination, and, as a consequence, the inefficient would be "plucked" by the faculty for the fame of their institution.

These papers elicited considerable discussion, showing that the opinion of the fellows coincided with the views of the essayist.

The Role of Bacteria in Infectious Diseases was the title of the third paper, by Dr. HENRY O. MARCY, of Boston, who referred to the great importance of the subject to medicine, whether in relation to its theory or its practice, and to the great amount of literature already issued upon the subject, giving as the reason of this additional contribution the conclusions reached by a lecturer in Boston during the past year, w.l.o., in a series of semi-popular lectures, asserted that even fermentation was not caused by the development of a low order of vegetable organisms. This statement was based on the assertions that the micro-organisms in any series of experiments had never been separated from the "ambient living matter," which must be considered of a low degree of inherent vitality, and that, until a well-washed micrococcus or bacillus had been isolated upon the point of a needle and then introduced into a sterilized nutrient solution, the conditions of the problem would not have been fulfilled. Since anything might be doubted, and science was only pure, simple truth, and never suffered from test, the essayist had determined to put the matter to the test. Dividing the objection into that regarding the "ambient living matter" and that relating to the germ, and recognizing the "ambient living matter" as the bioplasm of Beale, which, it was admitted, had inherent vital power (and possibly in the blood of a healthy animal this vital power would be shown if anywhere), the following experiments had been made, to determine the bioplastic power of protoplasmic matter. The blood of healthy sheep and oxen was taken, with careful precautions, and, as soon as the clot had separated, sterilized glass bulbs were filled and sealed by the flame; and others, charged with sterilized culture fluids, were inoculated in varying proportions. These were kept for

different periods of time, subject to the same conditions as in the growth and testing of various bacterial organisms, and careful examinations made at different dates with a Zeiss one-fourteenth objective, giving an amplification of about one thousand diameters. Only in one of twenty bulbs did any change take place, and this, upon its first opening on the third day, remained sterilized. Albumen from an egg still warm from the nest, milk aseptically drawn and put up at once, and the aqueous humor, were also thus tested. In a series of forty-one bulbs, only two contained bacteria and micrococci, which evidently were accidentally introduced. It seemed fair to deduce that this "ambient living matter" possessed no power of reproduction, which indeed had usually been assumed in investigations of this character.

No one at the present time denied the importance of these micro-organisms, or the relation they sustained to disease. Whether that relation was one of cause and effect could be demonstrated in the class of zymotic diseases. In this case medicine would have at least a scientific foundation. But, while science was "pure and simple," a very difficult problem presented itself where generalizations were attempted. But generalizations might be possible in the near future, from the accumulation of facts by many independent investigators. To demonstrate the action of the micro-organism it must be separated from everything else, whether "liquid ambient matter" or chemical poison, having relation to the disease.

This organism, thus separable, must, upon inoculation in the tissue of a healthy living animal of the same species, cause a reproduction of the disease. To separate the micro-organisms fully, the process of pure culture had been devised, in which, as in some of Dr. Sternberg's experiments, in the eighth culture the proportion between the original matter and the amount of culture fluid could only be expressed by figures representing quadrillions; and yet a few minims of this eighth culture possessed all the virulence of the first.

Again, if the septic material acted by chemical changes, it should act rapidly, or, being eliminated, recovery should ensue, which was not the fact. For, if the animal died, it was never until time enough had elapsed for the reproduction and growth of micro-organisms, which, upon examination, were found in the tissues. The way in which bacteria produced death was probably by a combination of several processes, so that it was made a difficult study from the complexity of vital equations.

There were many questions relating to the subject which we must for the present, and perhaps for all time, remain ignorant about, as, for example, how certain forms of infectious disease produced immunity from a subsequent attack of the same. The various diseases in which bacilli or micrococci had been demonstrated more or less clearly were enumerated with some detail. It was to be concluded from this review that the time had passed when the critic of the germ-theory of disease could content himself with captious remarks upon "fashion in medicine," etc. In this direction science was not without its martyrs; the investigation of the cholera in Egypt and India and of yellow fever in Havana was not less dangerous than an expedition to discover the sources of the Nile or in quest of the Northwest Passage.

The Trade Aspect of Medicine was the title of a paper by Dr. A. L. GIBON, of the navy. It treated first of the tendency of many to degrade the profession of medicine to a mere trade. Among the ninety thousand physicians of the country there were mechanic surgeons, men midwives, and trade doctors, and had they a right to the honor and consideration that pertained to the other members of the profession of medicine? If not, how could the fact be made patent?

Not long ago there was a complaint, voiced in a communi-

cation to one of our medical weeklies, because an army surgeon happened to treat patients in civil life, and thus deprived a civilian of a possible fee. There the trade spirit was shown ingrafted on a noble stock, which it threatens to overrule and cause to bear only its own unsavory fruit. The correspondent wrote as he felt, and he felt as the corner grocer felt whose gall was stained because some other vender had cut down his sales by offering better or more tempting wares.

The trade physician made everything bend to practice—there was no danger that he would favor boards of health, or look with complacency upon preventive medicine. Even in society meetings the section of State medicine was not a sufficiently coated pill for him to swallow; but he was anxious to learn of some formula good for a given disease. Even some medical societies (not all, but some) had become mere trade unions, as was proved by their using a fee-bill. Truly, such men did not belong to the profession, but how were they to be kept out of it? Attempts at exclusion of various kinds had failed; educational acquirements, while meaning something, would not exclude all of them. The remedy lay in the profession itself. But what constituted the profession? Was it a tri-unity of science, art, and trade? Colleges failed, societies failed, there remained but a separation of those who clung to the tradesmen and those who did not.

But there were beams in our own eyes—we were not all willing to say we did not know, or to refuse a fee from one who should use it for bread; to use hygienic measures rather than drugs where hygienic measures would answer. To these and other counts we must frequently plead guilty. But, if all this was done, how could men who made medicine their profession live? In the first place, a higher standard would decrease the number entering the profession. Hospitals and dispensaries should be largely increased in number, and the young graduate, instead of being obliged to wait, should be able to enter upon the service of one of these hospitals where he would receive an assured salary. This would give employment to a large number of physicians, secure better treatment of the poor than the nostrum so often employed, and give an opportunity for the accurate collection of statistics.

Differentiation the Test of Civilization; the Specialist and his Education (the President's Address).—At the evening session, the PRESIDENT read his address, Vice-President GIBON having been called to the chair. He referred to the medical history of Maryland, quoting from the earlier records, to show that the commonwealth was early alive to the qualifications of practitioners, even of specialists. Then, touching on the principle of division of labor, he spoke of the result brought about by such a division in the medical profession, not, however, without the opposition of many men in the profession. He recounted in order the arguments pro and con used in opposition to and in favor of specialism, and concluded that the specialist had come, and he had "come to stay." The education necessary for the training of a specialist was then taken up and discussed.

Wednesday's Proceedings.

Honorary Members.—The Council recommended that Dr. GEORGE M. STERNBERG, of the army, and Dr. OLIVER WENDELL HOLMES, of Boston, be elected to honorary membership, which was done. Four additional fellows were also elected, making forty-five in all.

Election of Officers.—The following-named gentlemen were elected as the officers for the ensuing year: Dr. ALBERT L. GIBON, of the navy, president; Dr. R. STANSBURY SUTTON, of Pittsburgh, Dr. JAMES A. STEWART, of Baltimore, Dr. WILLIAM ELMER, of Bridgeton, N. J., and Dr. J. CHESTON MORRIS, of Philadelphia, vice-presidents; Dr. RICHARD J. DUNGLISON, of Phila-

delphia, secretary and treasurer; Dr. CHARLES MCINTIRE, JR., of Easton, Pa., assistant secretary.

The Induction Coil; its Varieties and the Differential Indications for their Use.—Dr. A. D. ROCKWELL, of New York, read a paper with this title. Two kinds of electro-magnetic machines had been presented to the profession, the separate and the continuous coil. These were explained by means of diagrams, and a preference was expressed for the continuous coil. With this form of machine it was possible to have ten different combinations, but, after much experience and observation, he had found that three of these possessed all the properties that could be obtained from them all. These were: 1. The current obtained from the primary coil, of large quantity and small tension. It was of considerable power—it would burn iron wire and could be used for electro-plating. It had but slight power of causing contractions of the muscles in health, but in some pathological conditions would produce muscular contractions far exceeding in vigor those that were called forth by the stronger induction coils. This current would relieve true neuralgia of the head better than other induction coils. In cases of asthenopia, the tired eye was relieved, and by its continuous use strengthened; it was also employed to relieve annoyance from *musca volitantes*. 2. A combination of the primary with the first and second induction coils, which gave a current of peculiar and unique character. It would electro-plate, but would not burn steel. It had the maximum power of producing muscular contraction, but each additional coil decreased this power—why, it was difficult to say. The current was not at all pleasant, and was called for where a powerful impression was required; hence, in not a few cases of paralysis where the response to galvanism was perfect, but where there was a diminution of the farado-muscular contractility, this current is better than any other. In superficial forms of anæsthesia it was, perhaps, in no way superior; but in certain persistent forms of lost or perverted sensibility it was better than any other form. 3. The primary, in connection with the first, second, and third induction coils, made an interesting and important combination. It was tonic and sedative. Its range was wider than those of the others, and it was useful in general faradization. The best constitutional effects were brought about by this form, and it acted in relieving that great army of symptoms shown in general neurasthenia. The action on the motor and sentient nerves was less severe, and its general effects were more agreeable.

In the absence of Dr. V. P. GIBNEY, of New York, his paper, on "Some Comparative Results of Treatment of Chronic Articular Osteitis of the Hip," was read by title only and referred to the Council.

The Place of the Physician in Literature was the title of the next paper, by Dr. C. C. BOMBAUGH, of Baltimore. This place was active where the physician was writing, and passive where he was written about. It was to this latter form that the paper referred, showing, by quotations from the whole range of literature, the esteem or contempt in which the profession had been held, and showing that in many instances satirists had had only too good reason for their satire. If these writings had been accepted in good faith, and acted upon, it would have been of great help in ridding the profession of some of its follies.

Observations on One Hundred and Thirty-seven Abdominal Sections was the title of a paper by Dr. R. S. SUTTON, of Pittsburgh. These observations were founded upon various operations in America and Europe, twenty-nine of them by the writer, comprising the various forms of abdominal section. Most of the ovariectomies had been done upon a comparatively poor class of patients, and in the United States the rule had been to operate after the health of the patient had been broken, and to operate at her home. In England, Scotland, and Germany

early ovariectomy in a special hospital was recommended, while in Austria the patients were not seen so early, and the operation was performed in the general hospital, where the results were not so good. There was a time in every case of ovarian tumor where there were no adhesions, and the operation was then almost free from danger. If, by neglect of the patient or bad medical practice, she was tapped and persuaded to wait until death stared her in the face, the risks from the operation were greatly increased. He had been gradually approaching three conclusions: 1. Nearly all patients with ovarian cyst recovered if operated on early and with proper precautions. 2. A very large number would die, if operated on in their own homes, under ordinary precautions. 3. Simple cases and a well-regulated special institution for the work would always be the mainspring of success in the operation. An ovariectomy done early was one of the easiest of surgical operations, but a neglected case was a very different affair. After the operation was completed, a most important matter was to leave the peritoneal cavity dry. As a rule, the younger subjects did best, but older ones bore the operation well. Climatic influence had very little effect. The details of antiseptic precautions need not be carried out, but one must "wash and be clean." Methods of operating differed very much. The simpler methods were preferable. The prevention of loss of blood was of the greatest importance. In supra-vaginal hysterectomy, the question of the disposition of the pedicle was still *sub judice*—where a cyst was multilocular, a trocar should be used, and as the cysts were emptied the abdomen should be filled with sponges, to protect the intestines from chill. Adhesions were best treated by ligation and division with Paquelin's cautery. The best outside dressing after hysterectomy, if the stump was left outside, was iodoform gauze. Drainage in intra-abdominal operations should be resorted to only in cases where it was not certain that the bleeding had all been arrested, where many adhesions had been divided without the cautery, and when the peritonæum was so irritated that it was almost certain to throw off much serum.

Wet instruments were more comfortable, and taking them directly from the bath, and replacing them until they were needed again, insured cleanliness. The best appliance for arresting hæmorrhage was Kæberle's hæmostatic forceps. While modes of operating differed widely, simplicity and care in the details of preparation and finishing were two very important points.

Dr. Sutton took the following steps in his own operations: Preparation of the room in which the patient was to be operated on, of the instruments and sponges, of the patient herself, of the nurses, and of the operator and his assistants. Care was taken as to the admission of spectators. The room contained only a bed, a table, and a chair, well washed and treated with a solution of mercuric chloride (1-2,000). The instruments were scrupulously cleansed, the patient was given a laxative dose thirty hours before the operation, and a complete washing on the morning of the operation. She ate her breakfast as usual, and only knew of the approach of the operation by her not being furnished with her dinner. The nurses, operator, and assistant all took a bath and put on fresh clothes previous to the operation, and all their hands were washed in oil of turpentine. He used two nurses and one assistant. Spectators were limited to three, and they were not allowed to touch anything. They were obliged to leave their coats in the hall. The patient was anæsthetized by the nurse, and carried on a board to the table, firmly secured, and having a can of hot water placed at her feet. The region of the operation was the only part exposed, the rest of the abdomen being covered with a rubber sheet, over which were placed towels wrung out of hot water. The instruments were lying in a bath of hot water and the sponges were steam-

ing in a double bucket ready for use. The operation was done slowly and with extreme care.

Abdominal operations were growing in frequency every year, and, after excluding pregnancy, renal disease, and heart disease, very little attempt was made at a diagnosis until after the section. He strongly urged the selection of cases for operation, since it was so common a habit to tap, and each tapping rendered the success of an inevitable operation more doubtful. If surgeons would refuse to operate in these cases, the habit of tapping would soon be given up, and better results might be expected. The most important point now under consideration in abdominal work was the place in which the operation should be done. Thus far, hospital statistics gave the best results.

At the conclusion of Dr. Sutton's paper the Academy took a recess and visited the chemical and biological laboratories of the Johns Hopkins University. After this there was a spirited discussion upon Dr. Sutton's paper, participated in by Dr. W. TABOR JOHNSON, of Washington; Dr. E. H. M. SELL, of New York; Dr. H. O. MAROT, of Boston; and Dr. H. P. C. WILSON, of Baltimore. The views expressed in the paper were generally agreed to, the chief exception being the opinion that a surgeon should never refuse to operate while there was a ghost of a chance.

Specialties and their Relation to the Medical Profession was the title of a paper by Dr. L. DUNCAN BULKLEY, of New York. The following were his conclusions: 1. The science and practice of medicine were so vast that it was beyond the power of one mind to grapple with them as a whole. 2. Divisions of study and practice had been made unconsciously. 3. So-called specialists were those who devoted exclusive attention to their branches. 4. By the development of these they increased the scope of medical knowledge. 5. Every one should be more or less a specialist, in that he should know or do some one thing better than others. 6. Specialists should have a thorough training in general medicine in addition to their special preparation. 7. Specialties would be limited by the law of supply and demand, and by the increased teaching of special branches in our medical schools.

The Report of the Standing Committee on Laws regulating the Practice of Medicine in the United States and Canada, read by Dr. DUNGLISON, showed that Virginia had been the only State to enact a medical law since the last meeting.

The president appointed Dr. L. Duncan Bulkley and Dr. E. H. M. Sell, of New York, additional members of the Council.

Votes of thanks were passed to Dr. Lee, the retiring president, and to the authorities of the Johns Hopkins University for their courtesies.

The Academy then adjourned, to meet in New York in 1885.

PHILADELPHIA CLINICAL SOCIETY.

Meeting of September 26, 1884.

Imperforate Anus with Recto-Vaginal Fistula in the Adult.—Dr. CLARA MARSHALL read a report of two cases, which she reserved for publication.

Atresia Vaginae with Retention of Menses.—A case was reported by Dr. E. E. MONTGOMERY. Miss F., aged forty-four, had been brought to him July 5, 1884, by Dr. Sibbald, of Wissahickon, with the following history: She commenced menstruating at sixteen, and continued without disturbance until her thirtieth year. Two years previously she had fallen upon a curbstone, receiving quite a serious spinal injury, from which she fully recovered in a year. The menstrual periods, which had always been regular, lasting from three to four days, normal in quantity and color, at thirty became painful. Since then the pains had been constant and had increased with each period.

The discharge now lasted from seven to ten days, and was of a dark color and offensive odor. During the menstrual intervals there was a continuous discharge of "corruption," as she called it, making the constant wearing of a napkin necessary, and producing excoriation. All of these symptoms had been increasing during the past eight years, and she had been compelled to discontinue work a week or more at a time. She complained of a sensation of weight or pressure in the pelvis, attended with severe pain during defecation. There was no pain during micturition. Her nervous system had become much affected. Upon examination, the vagina was found relaxed, and the external parts red and bathed with secretion. The vagina was about two inches long, ending above in a lateral cicatrix. No uterus could be felt. Upon withdrawing the finger, it was found bathed with a dark, thick, highly offensive discharge. The use of a Sims's speculum disclosed a cicatricial line running from side to side across the fundus of the sulcus, just posterior to which the membrane looked thinner. Slight pressure against this with a sound perforated it, and this was followed by a profuse discharge of broken-down blood and pus. Ellinger's dilator was then introduced and spread to its full extent; over four ounces of the fluid flowed out. The cavity was then washed out with a carbolized solution. In this cavity above the cicatrix the uterus was found retroverted and firmly fixed, forming the roof. The cavity was dressed with carbolized glycerin on cotton. The subsequent treatment was conducted by Dr. Sibbald. He had informed Dr. Montgomery that there had been no further difficulty.

Dr. W. H. PARISH thought that the treatment adopted in this case was proper, as the result showed, though it was not in accordance with the treatment directed by the text-books. We were there told to puncture the cavity with a trocar and draw off the confined liquid drop by drop. This was undoubtedly wrong, and its disadvantages had been demonstrated in his own practice. The crucial incision was unquestionably best.

Dr. COLLINS related the details of a case treated after the manner of the text-books, with an exploring needle, a trocar, and drop-by-drop drainage. The cartilaginous membrane acting as septum was an inch and a half from the vulva, and was probably congenital. A crucial incision was made after drainage, and the corners were cut off. No further trouble was experienced by the patient.

Dr. MONTGOMERY thought, with Dr. Parish, that a free incision was best, though it had been precipitated in the case related by an opening occurring during the examination. The danger of septicæmia was certainly increased by a small opening. A particular point of interest in this case was the lateness in life and the time that had elapsed between the injury and the retention.

G. BETTON MASSEY, M. D., *Reporting Secretary.*

BROOKLYN PATHOLOGICAL SOCIETY.

Meeting of October 9, 1884.

The President, Dr. B. F. WESTBROOK, in the chair;

Dr. A. H. P. LEUF, Secretary.

Enchondroma of the Finger.—Dr. HERBERT C. ROGERS related the case of an Irishwoman, sixty-five years old, who came to his clinic at the Long Island College Hospital January 6, 1883. Twenty years before, she had been knocked down by a stage, picked up insensible, and carried to the Chambers Street Hospital, where it was found she had sustained a fracture of the right hip. She remained in the hospital three months, when she was discharged, and had been compelled to use crutches ever since. She thought that at the time of the injury she hurt

her finger, for about six months afterward it began to swell at the junction of the first and second phalanges. The tumor gradually increased in size; at times it was the seat of sharp, shooting pains. Six months ago it broke and discharged a thin, watery pus mixed with blood. The fistula had never healed, and the discharge had persisted.

Examination of the finger showed a globular tumor of about the size of a pullet's egg, with a small fistulous tract on the upper side which led to necrotic bone. Dr. Rogers amputated the finger at the metacarpophalangeal junction, and the stump healed promptly.

Atheroma of the Aorta; Rupture; Granular Disease of the Kidneys.—Dr. J. D. SULLIVAN related the case of a lady, fifty-three years old, who had enjoyed good health up to about three years ago, at which time she had an attack of sickness which was said by her physician to be pneumonia. This illness continued for a considerable length of time, and her physicians finally despaired of her recovery. Her husband then discontinued all medical treatment, and had her removed to the country, where, by a system of forced diet, consisting largely of milk-punch, she gradually improved so that within the following six months her health was considered quite restored. Since that time she had been in pretty fair health, and had continued to take her alcoholic stimulants as part of her daily nourishment.

On February 18, 1884, at 7.30 p. m., Dr. Sullivan was hastily summoned to see her, as she had suddenly been taken seriously ill. Although he reached her residence in about twenty minutes, she died as he entered the room. He was then informed that for two or three days she had complained of a pain in the præcordial region, which produced a sensation of numbness along the left arm to the hand. She had just eaten a hearty dinner, during which she was quite cheerful. As she went up stairs after dinner she said the pain in her left breast had become more severe, her breathing became rapid and shallow, and, as the intensity of the pain increased, she began to cough up bloody mucus and experienced the utmost difficulty in breathing. This distressed condition continued about twenty minutes, when she died.

A post-mortem examination was made, fifteen hours after death, by Dr. J. H. Hunt, Dr. Alexander Hutchins and Dr. Sullivan being present. Rigor mortis was extreme; the body was well nourished. Hypostatic congestion was very marked over the entire left side and arm. There was a large amount of black blood in the left pleural cavity. The left lung was very oedematous, but otherwise healthy, with the exception of an old cicatrix at the apex. The right lung was adherent to the chest-wall, also very oedematous, with a cavity in the apex, which apparently had healed. There was no blood in the right pleural cavity. On the internal surface of the arch of the aorta there were numerous spots of atheromatous degeneration. These spots varied in size from that of a small speck to half an inch in diameter. At the commencement of the descending portion of the aorta, near the origin of the subclavian artery, there was an atheromatous patch of about the size of a half-dime, where the internal and middle coats were entirely destroyed, and the external coat was perforated. But the areolo-fibrous investment or sheath remained intact, so that, in passing a probe through the perforation, no opening could be found in the sheath of the aorta.

There was an atheromatous deposit of about the size of a silver ten-cent piece near the origin of the arteria innominata, which was attached at one border only, and allowed the opposite border to move to and fro like a valve. This deposit became detached while manipulating the specimen. The liver showed marked evidence of fatty degeneration. The gall-bladder contained twelve pretty large-sized calculi. Both kidneys

were in a state of granular degeneration. They were small, hard, and contracted, irregular in shape, in consequence of the shrinking having taken place unevenly, and the surface was studded with hemispherical granulations.

There were many points of interest in relation to these specimens, but the speaker would briefly allude to only a few of them. 1. There would appear to have been some connection between the perforation in the arch of the aorta, near the origin of the left subclavian artery, and the pain in the left side of the chest and left arm, which troubled the patient for several days before her death. It was difficult to say whether the pain had been produced by the progress of the disease in the coats of the aorta, or by the aneurysmal bulging of the external coat, and consequent pressure on the adjacent tissue, or whether the diseased spot caused some interruption to the normal flow of the blood-current. There were no adhesions nor any evidence of any inflammatory action in the surrounding tissues. 2. Judging by the symptoms, and the post-mortem condition of the lungs, it was evident that there was some great obstruction to the return of the blood from the lungs to the heart. For about fifteen or twenty minutes before death large quantities of frothy, bloody mucus were coughed up, and after death the lungs were found intensely congested and oedematous, and the bronchi filled with the same kind of bloody mucus. It was peculiar that there was considerable blood in the left pleural cavity, and yet no opening could be found through the sheath of the aorta or the pleura. It was probable that the blood had dissected its way between the aorta and its sheath for some distance before bursting into the pleura. 3. He would draw attention to the kidneys and one or two possible causes of their diseased condition.

It was quite probable that the patient's illness three years before, which continued for some months, and during which her physicians despaired of her recovery, was an attack of pleuro-pneumonia. Was it not safe to presume that the pathological condition then existing for a considerable length of time had acted as a cause in producing the disease of the kidneys? His observations and experience led him to believe that the morbid products of inflammation retained very long in any portion of the body imposed an additional task on the kidneys, and tended to excite disease of their structure. He mentioned this point, not that there was anything new or original in it, but because many of those who had written upon renal diseases had not even alluded to it as a cause of kidney degeneration, and because he had reason to believe that it was frequently either ignored or but lightly considered. In his opinion, it was a point worthy of more careful consideration. There was another element in the history of the case which might be considered as having had a causative influence not only in damaging the kidneys, but also in bearing upon the fatty degeneration of the liver and the atheromatous condition of the aorta. It was noted that during the last three years alcoholic drinks were taken, although in moderation, yet as a part of the patient's daily food. The alcohol might have served a good purpose in assisting in the restoration of her health when she was low and feeble, but its continued use had certainly been injurious. By interfering with nutrition, the continued use of alcohol, even in small quantities, would lead to deterioration of the various tissues of the body.

Dr. FERGUSON called attention to a marked myocarditis present in the specimen. It showed many spots of fibroid induration. Subjects in this condition might die suddenly without a rupture of a blood-vessel or an aneurysmal sac.

Dr. HUNT remarked that, while in this case blood was found in the left pleura, no complete opening could be discovered in the wall of the sac. The inner and middle coats had been rup-

tured, but the outer one was intact. He supposed that the blood had filtered through the adventitia and surrounding connective tissue, as they were infiltrated with blood.

Colloid Degeneration of the Thoracic and Abdominal Viscera and the Diaphragm; Death.—Dr. JOSEPHINE A. DUPRÉ related the following case:

An Englishman, fifty-five years old, a machinist, was admitted into St. Luke's Hospital, New York, February 14, 1881. He had always been a sober man, and had been healthy up to one year before. He then noticed for the first time that his urine was dark-colored and that his stools were clay-colored. At that time he began to suffer from backache and headache, and feel very dull and stupid, and was taken with a severe cramp in his right side, which prevented him from straightening himself out. The pain was principally located along the course of the ascending colon. After that, nausea and vomiting were prominent symptoms; for days he would vomit everything ingested. Since the cramp he had had a girdle of pain at the level of the epigastrium.

At the time of his admission he was extremely jaundiced. He had not noticed this until five months before. Before that he had disturbed vision, xanthopia, headache, ringing in his ears, and vertigo, and also felt dull and apathetic. He now felt very weak, had vertigo when standing, his appetite was fair, and he drank a large quantity of water. His bowels were loose; he had not vomited for two days. The specific gravity of the urine was 1.020; it was acid in reaction and dark-colored; chemical examination showed nothing abnormal. He had had chills and fever fifteen years before, lasting nine days, and again, six years before, lasting three months. He was vaccinated nineteen years before, and stated that, immediately after that, he was covered with an eruption, and that his hair afterward came out, and he had a sore throat. For two months before his admission his feet had been swollen and he had had considerable ascites. There had been no epistaxis or hæmatemesis. He had never had any venereal disease. From the time of his becoming jaundiced he had complained of itching, anorexia, flatulence, offensive clay-colored stools, headache, and insomnia.

Examination showed tenderness over the liver, which organ, together with the spleen and the heart, was displaced upward by flatus. There were no nodulations over the abdomen; the liver was decreased in size. There were some enlarged cervical and inguinal glands.

On the 24th he was still jaundiced, and had flatulence and headache. On the 27th he was suffering with nausea, vomiting, and hæmorrhoids.

On the 1st of March the urine was alkaline, and contained a quantity of bile and traces of albumin.

On the 2d he had fever in the afternoon, with vertigo.

On the 5th, dullness was found over both flanks. The liver reached to within an inch and a half of the umbilicus; there was tenderness over its lower border; and there seemed to be an irregular hard spot at the inner side of its right lobe. There was moderate tympanites, with ascites. The feet had been swollen for two weeks. He continued to have night-sweats.

On the 8th a diagnosis was made of malignant disease of the liver.

On the 14th it was noted that he had constant pain across his epigastrium, extending around toward the right to the small of his back. This was not affected by the condition of his bowels, or the ingestion of food. The spleen was not enlarged. His condition changed daily for better or worse. His temperature was elevated.

On the 30th he was more deeply jaundiced, and was losing flesh, but was free from pain. The specific gravity of the urine was 1.024; it was acid and contained granular matter and a

trace of blood, the bile being in less quantity than before. The jaundice and flatulence soon began to subside.

On the 4th of May it was noted that he was very weak, and that there was considerable ascites. The size of the liver and spleen could not be made out, on account of flatulence. The liver was enlarged; the lungs were normal.

On the 9th it was noted that he was losing flesh. There was no nausea or vomiting. There was oedema of the abdominal walls, he complained of cramps in the abdomen, the jaundice was increasing, he was very weak, and his temperature was elevated.

On the 18th there was feeble respiratory murmur all over the chest posteriorly, with a few moist râles at the base of the right lung posteriorly.

On the 21st the specific gravity of the urine was 1.022, and it contained amorphous matter, pigment particles, bile, and a trace of albumin, and was alkaline. At the level of the seventh rib, on expiration, the right side of the chest measured 17½ inches, and the left side 17¾ inches. His temperature had ranged between 99° and 101° F. during his illness.

From April 1st to April 25th he passed between seventy and fifty ounces of urine per diem, from April 26th to May 8th between fifty and thirty ounces, from May 9th to May 24th between forty and twenty ounces. He was discharged, unimproved, on the 24th.

The foregoing facts Dr. Dupré had obtained through the courtesy of her friend, Dr. C. Ellery Dennison, late house surgeon at St. Luke's.

The patient came under her care three days after leaving St. Luke's, and she undertook the case for the sole purpose of securing an autopsy as soon as death occurred, which happened on June 16th.

During the three weeks that he survived she sought to allay the gastric symptoms, relieve pain, secure rest, and supply nourishment. His condition differed in no essential manner from what it had been while he was in the hospital. Death was due to slow asthenia.

The autopsy was made by herself, assisted by Dr. E. M. Cushier, and Dr. E. J. Chapin, of New York, about fifteen hours after death. The body was extremely emaciated, and its surface deeply jaundiced, except at the lower part of the upper and lower extremities, which were very pallid, and enlarged from oedema. The ends of the fingers were clubbed. The conjunctivæ were jaundiced to an olive-green hue. The abdominal wall was tense and oedematous. The abdomen was greatly distended with fluid and flatus. A large quantity of dark-green fluid was removed from the abdomen. The intestines were greatly distended with flatus. The omentum had floated up under the diaphragm, and was so closely rolled upon itself as to give during life the impression of an enlarged and carcinomatous liver. When spread out, it presented a remarkably beautiful appearance. Its entire surface was freely studded with nodules, pale-pink, yellowish, or greenish hued, and varying in size from that of a pin's head to that of a small cherry. The free border for about three inches presented an aggregated mass of these bodies. Both the parietal and visceral layers of the peritonæum were dotted at irregular intervals with the same translucent, pale-yellow, or pinkish masses. In the right lumbar region the duodenum, the pyloric end of the stomach, the head and body of the pancreas, the hepatic flexure of the colon, and numerous lymphatic glands were all matted together as though glue had been poured out in this region. The peritoneal covering of the diaphragm was found studded with these "colloid" masses. The parietal pleura was found in a similar condition. The left lung was bound to the chest-walls by old pleuritic adhesions, which were with difficulty separated. All of the thoracic organs

were removed, and the investigation was continued March 10, 1884, with the assistance of Dr. A. H. P. Leuf, who had kindly prepared microscopic specimens which he would show at the meeting.

The liver was normal in size and consistence, except where this degeneration existed. Scattered throughout its substance could be seen these "colloid" masses, varying in size from that of a pin's head to an inch or more in diameter. The peritoneum covering the liver was very much thickened where it was in contact with these growths, and firmly adherent. A piece of the peritoneum attached to the fissure of the ductus venosus was studded with "colloid" bodies, varying in size from that of a pin's point to that of small peas. The cystic duct was occluded; the hepatic duct was normal: the round and broad ligaments were infiltrated and thickened with fine masses of "colloid" material.

The diaphragm was infiltrated and thickened throughout its entire extent with "colloid" material to such a degree as to appear like sole-leather. It was adherent to the upper and posterior part of the right lobe of the liver. The ductus communis choledochus was infiltrated with "colloid" matter as it entered the duodenum. The pancreatic duct was very much dilated. The substance of the pancreas was also infiltrated with "colloid" material. The middle portion of the pancreas had undergone cystic degeneration. The head of the organ was converted into a mass of "colloid" substance.

The spleen was not enlarged; its surface was studded with particles of "colloid." There was also "colloid" material in the hilum of the spleen. There were no nodules in its substance.

Portions of the parietal peritoneum showed particles and patches of this "colloid" matter, some of which were firmly adherent, while other parts were easily detached.

The greater omentum was one mass of "colloid" bodies of different size. The free border formed a thickened margin by the aggregation of these nodules an inch or more in width and half an inch in thickness. The lesser omentum presented about the same appearance as the greater.

The transverse colon was normal. The interior of the stomach was normal. Its pyloric orifice was infiltrated with "colloid" material. The ascending transverse and descending portions of the duodenum had undergone "colloid" degeneration, and the "colloid" matter projected into the cavity of the duodenum in the form of fungous growths. The muscular and mucous coats were entirely destroyed by this degeneration. The lymph-glands at the lesser curvature of the stomach were so much enlarged as to measure, collectively, six inches in diameter.

The heart was normal, except a peculiar open or lace-work appearance along the margins of the aortic and pulmonary valves, and a large post-mortem clot in the right auricle.

The substance of the right lung was infiltrated with "colloid" matter. The posterior surface of the anterior edge of the upper lobe of the right lung had a patch of "colloid" material about eight lines in diameter, adherent to the pleural covering, but it was easily detached. The free surface of the patch was rough, as though it had been adherent to the parietal layer of the pleura. The left lung was also infiltrated with "colloid." Between the lobes of the left lung there was an enormous gland.

The pleura over both lungs was freely studded with patches of this "colloid" material in varying stages of formation or degeneration. Otherwise, the lungs were normal.

The bronchial glands were very much enlarged, varying in diameter from an inch to an inch and a half. Some of these glands showed a honey-combed appearance in structure.

Dr. A. H. P. LEUF said that, at the request of Dr. Dupré, he had made a number of sections from clumps of colloid material taken from the viscera in this case. These collections were distinguished by being circumscribed nodules, as could be seen with the unaided eye, but the microscope revealed a continuation of this discrete arrangement in detail. Every clump, or part of a clump, that was examined minutely was seen to consist of round or oval collections of many concentric layers of a comparatively firm and transparent substance. Inclosed within these were to be observed large and small cells, having a slightly granular protoplasm and one or more nuclei. They were mostly found well in the center of each round or oval mass, but others were also to be noticed between the layers nearer the periphery. These masses, consisting of so many concentric layers, were separated from one another by bands of connective tissue, or, in other words, they rested in alveoli, or cells like those of the honeycomb, formed of connective tissue. In several of these specimens it would be noticed that the transparent gelatinous substance forming the concentric layers had disappeared and left but a few whole and broken cells behind in the connective-tissue alveoli. On account of the thickness of these sections, which they usually had to have to be well studied, it would be necessary to keep changing the focus of the microscope while looking at the object so as to bring into view different layers of the section, and in that way demonstrate more clearly the concentric arrangement of the laminae of these little masses.

Colloid changes were at one time believed to be a certain variety of carcinoma, and by that he meant that colloid was formerly supposed to have had its characteristics from the beginning. It was now, however, more generally thought to be a degenerative change of an epitheliomatous growth, and yet it was difficult to find the gradations that one must expect to find under such an hypothesis. In all the sections made from various viscera of the specimens shown this evening, there was the remarkable sameness that would now be seen in the slides. The interesting fact to be noted in the microscopic details of this case was the comparatively large number of cells among the colloid matter.

Dr. FERGUSON remarked that in cases of colloid degeneration in the male it was exceptional to find the testicles not involved.

Dr. HUNT asked if the pancreas might not have been primarily affected in this case, as it was so extensively degenerated.

Dr. FERGUSON thought not, because the disease almost invariably began in the stomach, or ovaries, or testicles, on account of the abundance of epithelium in these organs, but the pancreas was often secondarily involved. He asked if the pylorus had been much affected.

Dr. DUPRÉ answered that the pylorus had been but very slightly affected, while the pancreas had been almost entirely replaced with the colloid material, and it was this that seemed to her to indicate that the latter organ was the primary seat of the disease.

Dr. FERGUSON said he did not deny the possibility of the degeneration having primarily affected the pancreas, but, if it had, it was a rare case in that respect.

Dr. LEUF called attention to a point that had not been brought out. This case showed very clearly how the colloid degeneration might extend by contiguity of structure. A nodular mass of colloid material measuring fully 3 cm. in diameter was found located in the diaphragm and extending upward into the base of the right lung and downward into the right lobe of the liver. About one half of it was lodged in the liver, and appeared to have originated in this organ. There were many such illustrations in this case.

(To be concluded.)

MEDICAL SOCIETY OF NEW HAVEN COUNTY, CONNECTICUT.

Semi-annual Meeting, held at the Elliott House, New Haven, Thursday, October 23, 1884.

The President, Dr. R. B. GOODYEAR, of North Haven, in the chair.

Election of New Members.—The following-named gentlemen were elected members of the society, having been recommended by the Committee on Credentials: WILLIAM R. MARSDEN, M. D., University of the City of New York, 1881, of Meriden; THOMAS L. AXTELL, M. D., University of the City of New York, 1880, of Waterbury; JAMES L. TERRY, M. D., College of Physicians and Surgeons, New York city, of Meriden; JOSEPH W. JEWETT, M. D., University of the City of New York, 1881, of New Haven; and LEONIDAS C. FINAL, M. D., Yale College, 1880, of Branford.

Sanitary Training in Public Schools.—Dr. A. W. LEIGHTON, of the Committee on Hygiene, read a paper on this subject, of which the following is an abstract:

At present our system of education, like many other existing institutions, was being made the subject of no little criticism. Its imperfections were being pointed out and desirable alterations were being suggested. It was evident that hitherto practical training had been made subordinate to the ornamental branches. In the improved curriculum what place should be occupied by sanitary knowledge? Such training must necessarily be elementary, but should nevertheless be comprehensive. Instruction should not be limited to physiology and personal hygiene, but should be extended so as to include public hygiene as well. This training should be introduced not only into institutions of advanced learning, but also into the graded schools where boys and girls are being taught, who, at the age of thirteen or fourteen, must begin a life of independence, and come daily under the laws of life of which they were now so ignorant. Through lack of training of this kind parents exposed their children to illness, and themselves to bereavement and pecuniary loss, because they failed to recognize the laws governing the transmission of communicable disease. Individuals brought upon themselves transient inconvenience or permanent disability by exposure, overwork, and innumerable other hygienic sins, whose import they did not realize. No one could compute the suffering, the wrecked lives, the immediate and remote disaster, the countless consequences of ignorance and disobedience of hygienic law, as applied to the individual and his or her offspring. But where and how should such teaching begin? Where should this helpful knowledge be inculcated? The home and the street were important educational factors, but we could not rely upon contact with parents in-doors and upon the social atmosphere outside for intelligence in health matters; for, although the children owed much of their practical knowledge of life to these sources, they were also sources of prejudice and superstition. These influences were responsible for many injurious personal habits, for the maintenance of quackery, for the ridiculous and harmful therapeutic folk-lore, for the dogma that death and disease were dispensed for moral purposes. Nor could we expect sanitary instruction from periodical literature or from the daily press—that educator for which so much had been claimed and from which too little that was true and elevating proceeded. This training should stand second to none in any system of elementary education, and in some form should be considered essential in every department of liberal or professional study. Many improvements had already been made in the teaching of children in the primary schools, but an examination of the whole scope of public instruction revealed inconsistencies that would

not always be tolerated, and the most profound inconsistency of all was this: the teaching of everything and anything but the most necessary and elementary knowledge of the preservation of life and health. The public-school course comprised an imposing series of studies. And yet the conspicuous absence of all health instruction from the grammar-school course, taken with the fact that the great majority of boys and girls could have no further school preparation for life, would lead one to infer that such beings were mere automatons to be fitted only for business, stored with the conventional accomplishments of polite society, and utterly independent of the laws of individual or general life and health. In the higher institutions of learning, also, the instruction on this subject, was incomplete and inadequate. But it was only in the public schools that direction could be given to the main stream of youthful life as it flowed out beyond the sources of systematic education. Those who were familiar with people whose circumstances forced them into industrial occupations and the active struggle of life at an early age knew what a slight chance there was in after years for acquiring the essential knowledge for which we contended.

Believing that some elementary instruction in sanitary science in the grammar schools was both feasible and advisable, it was suggested that the following addition be made to the course, if necessary, at the expense of the least important studies. To begin the experiment, a weekly conversation on this subject should be held in one of the schools, the scholars of the two highest rooms being divided into two classes according to sex, and the exercises being conducted by a physician or other person especially adapted to the work. In these talks mental confusion from multiplicity of details should be avoided. At first, simply the essential principles of sanitary science, including personal hygiene, should be set forth. First of all, the youth should be taught to give this subject conscientious thought, and then helped to knowledge appropriate to their age and mental capacity. All average boys or girls of fourteen years should know what clothing was best for them, and what and when to eat. They should know the penalties that followed heavy lifting and straining, the compression of the chest and abdomen, and the exposure of the feet and extremities to climatic influences. They should know the chief dangers of resorting to nostrums of unknown composition for maladies of the nature of which they knew nothing. They should know what the death-rate was and why it varied, the function of quarantine, the essentials of house drainage, heating, and ventilation, and the chief results to be gained by the cleaning of cities, the avoidance of soil-pollution, and the pollution of drinking-water. They should have an idea of what worry was and the effects of it, and of mental and physical work without sufficient relaxation. They should know the hygienic as well as the moral bearing of vice and intemperance, and that they were immoral chiefly because they were injurious. Especially should the laws of heredity be taught, and their applications, so far as known, to those diseases and traits which were most baneful.

Thus through elementary training might valuable results be hoped for. These children would be taught to be thoughtful and observing, and they would be dismissed well furnished with the material to continue these studies, and prepared to exert a favorable influence on public sentiment in regard to sanitary questions.

An Electric Laryngoscope.—Dr. M. C. WHITE said that for a long time he had been anxious to obtain a better light for microscopical work. The construction of electric lights had led him to hope for something better from this direction. Last winter, at a meeting of the Royal Microscopical Society in London, a small lamp for use with the microscope had been shown. Recently, at the Electrical Exhibition at Philadelphia, a lately

patented instrument, designed for the use of dentists and surgeons in examinations of the mouth and throat, had been exhibited. Such an instrument Dr. White had prepared to show the society. It consisted of a laryngeal mirror, the shank of which had been replaced by an incomplete cylinder in which was a small incandescent lamp. This incensement was of hard rubber, so that no unpleasant degree of heat would be communicated to the mouth. The lamp was arranged near the mirror, so that it was kept warm and the rapid condensation of moisture upon it prevented. It was also so placed that a clear white light was reflected from the mirror, showing the real color of the tissues. The handle of the instrument contained a resistance coil, so as to diminish, and otherwise regulate, the intensity of the current. Four Bunsen cells of good size were connected with the instrument. At the hospital fifteen Leclanché cells were used to produce the same amount of illumination. It was probable that this instrument would be rapidly introduced into surgical practice. It was said to have been already used to illuminate the stomach.

Monstrosity with Deficient Cranial Development.—Dr. FRANK E. BECKWITH, of New Haven, presented a premature still-born fetus which had been carried nearly to full term. There was a large hernia of the brain, due to greatly deficient development of the occipital bones. This fetus had presented by the breech. Statistics showed that the head presented in 98 per cent. of deliveries at term, but in only 83 per cent. of premature deliveries. The breech presented in one of sixty cases of delivery at term, but in one of from two to six cases of premature delivery. The center of flotation was altered by the death of the fetus, so that the proportion of breech presentations was increased to one in three or four of this class of cases.

The Prognosis and Treatment of Scarlatina was the subject adopted at the last meeting for discussion at this time. Dr. M. C. O'CONNOR, of New Haven, chairman of the committee to report upon the question, read an elaborate review of the teachings of various authorities upon the subject. A summary of the more important conclusions deduced is as follows:

There was scarcely a disease in which the element of uncertainty entered so largely as in scarlet fever. The various types, forms, and complications, as well as the epidemic influence prevailing at the time, had great influence in determining the tendency toward death or recovery. The mortality was greatest in infants and in children under five years. In the puerperal state it was almost invariably fatal. Flint stated that he did not know of an instance of recovery. Occurring during pregnancy, it almost certainly ended in abortion.

In the prognosis of individual cases caution was necessary. Apparently mild cases were not free from the danger of severe complications and sequela. Unusual malignancy of the disease might cause intense prostration, coma, and an early fatal termination. High initial fever, severe throat affection, and great depression indicated danger. Convulsions, especially occurring early, were of unfavorable import. Laryngitis usually proved a fatal complication. Very severe inflammation of the fauces, extending to the neighboring glands and connective tissue, rendered recovery doubtful. Gangrene of the mouth and hemorrhages from the mucous surfaces were also of grave import. The same was true of cardiac affections. Renal complications involved great danger. They should be anticipated by daily examinations of the urine. Even after the albumin had disappeared the patient was not safe if casts continued. Slight delirium at night in mild cases was not a serious symptom, but, if active and constant, more grave. The rheumatoid condition of the joints, frequently noticed, was rarely serious. A scrofulous constitution predisposed to glandular complications. An early favorable prognosis was to be avoided. Some patients died

after the fever had left them, from the anæmia produced by the fever. Sudden and unexpected deaths sometimes occurred from uræmia, but were more frequently due to the formation of ante-mortem heart-clots.

Scarlet fever could not be shortened or aborted by treatment. Mild cases did not require active treatment, confinement to the bed being sufficient, with milk diet and attention to the bowels, the application of some mild liniment, such as camphorated oil, to the neck, and a chlorate-of-potassium mixture for the throat. Severe cases required more heroic measures. Hyperpyrexia might be effectively combated by the external application of cold water. This would diminish the heat of the body and the frequency of the heart's action. Sleeplessness, restlessness, and delirium were also relieved thereby. Quinine might be employed for the same purpose, given in five-grain doses three times a day to children of five years. Aconite and veratrum viride were less suitable on account of their depressing effect. Digitalis was better, but inferior to quinine.

Itching of the skin and great restlessness, due to irritation of the peripheral nerves, might be relieved by inunctions with olive-oil, bacon-rind, cocoa-butter, and similar preparations, more effectually than by tepid sponging. Five or six drops of carbolic acid might be added to each ounce of fatty matter or of vaseline.

A tendency to prostration could be avoided, and the strength of the patient sustained, in severe cases, by alcoholic stimulants. Wine—either port, sherry, or Madeira—was usually preferable for children, administered in small quantities with water, arrow-root, jellies, or other light nutriment.

If the throat was severely affected, the swallowing of lumps of ice was grateful to the patient. In some cases the inhalation of hot steam seemed to give more relief. Chlorate of potassium was now generally considered an important remedy. From half a drachm to two drachms might be given in divided doses during twenty-four hours. Tincture of the chloride of iron was a useful addition. Chlorine-water was highly recommended by Watson and others.

Local applications were useful if properly applied. Little difficulty would be found in making the applications if a long wire-handled camel's-hair throat-brush was used to paint over the affected parts, and if promiscuous swabbing, which was not beneficial, was avoided. The mixture containing carbolic acid, solution of the subsulphate of iron, and glycerin, recommended by Professor J. Lewis Smith, acted most satisfactorily. This also answered well when there was a sloughy condition of the fauces. The spray was more difficult to use in these cases than the brush. Gum guaiacum had been used in scarlatinal sore throat, but without any marked benefit.

If there was much implication of the Schneiderian membrane, the above-mentioned mixture might be diluted, and syringed into the nostrils. This would prevent decomposition, remove the offensive odor, and guard against blood-poisoning. Carbolic acid and water (1 in 200) might be used for the same purpose.

Swelling of the neck should be met in the early stages with cold compresses, which after a day or two, if the throat was not benefited, could be exchanged for warm applications, as of spongiopilin dipped in hot water, or light, hot linseed-meal poultices frequently renewed. If there was any tendency to suppuration, the pus should be evacuated as soon as it could be detected, so as to prevent purulent infiltration of the tissues of the neck.

The painful condition of the ear could generally be relieved by dropping a little laudanum and sweet oil or glycerin into the ear, and the application over the ear of a poultice of steamed hops frequently renewed. If otorrhœa occurred, the ear should be syringed with hot carbolized water.

Convulsions should be controlled, as far as possible, by the inhalation of chloroform and the application of cold to the head. The action of the kidneys should also be carefully watched.

Uraemic phenomena required prompt attention. A saline purgative or the compound jalap-powder was to be employed to eliminate urea. Fomentations over the loins and dry cups should be used. Diaphoresis should be produced by hot-air baths or by pilocarpine. If the urine was scanty, mild non-stimulating diuretics should be administered—such as the salines and digitalis, the diuretic *par excellence*. In the mean time the strength of the patient should be supported by light but nutritious diet, and a liberal allowance of wine. Extensive anasarca required the use of cathartics and diuretics. In less acute cases of albuminuria, or where the albumin was gradually disappearing from the urine, the tincture of the chloride of iron produced a very excellent effect.

Restlessness might be relieved by cold applications to the head, warm mustard foot-baths, and the bromide of potassium. If these measures did not produce quiet and sleep, anodyne remedies, such as belladonna or hyoscyamus, might be required. If these failed, opiates could be given, but they should be used with great caution, particularly in children, or if uræmia threatened.

Nausea and vomiting could generally be relieved by the sucking of small pieces of ice, or by the use of cold carbonated water.

Rheumatic complications were best treated by saline laxatives and diuretics, while severe pain was relieved by anodynes. Salicylate of sodium had not proved beneficial, and was likely to increase the irritation of the kidneys if they were at all affected.

Constipation should be relieved by simple enemata rather than by cathartics, unless there were other indications for the use of the latter.

In malignant cases all measures frequently proved unavailing. Cold affusion was most useful in the ataxic form of the disease. Alcoholic stimulants must be used at the same time. Carbonate of ammonium and mustard-baths might also be employed.

During convalescence, exposure to cold must be guarded against, and iron and other tonics should be administered internally. During this period scrubbings with carbolic soap, or detergent baths with carbolic innunction, should be practiced for the purpose of disinfection. The New York Health Board advised the disinfection of clothing, etc., with a solution of sulphate of zinc and carbolic acid.

The weight of evidence was opposed to the belief that belladonna had any prophylactic value against this disease. It might be given in the form of the extract dissolved in cinnamon-water, with the addition of a few drops of alcohol to prevent fermentation.

Dr. C. A. LINDSLEY, of New Haven, remarked that he saw no good reason for continuing to use carbolic acid, in the strength hitherto commonly recommended, as a disinfectant. Experiments had shown, and the opinion was growing, that it was less valuable than other agents. A solution of sulphate of zinc and salt was now most used. It had the advantage of not being disagreeable. At present there was a growing feeling that corrosive sublimate was the best disinfectant. It was commonly used in the strength of one to one or two thousand parts of water, with the addition of ammonia, or salt, or an aniline preparation, so as to avoid the danger of mistakes from taking it internally. In New Orleans it was used exclusively for washing vessels, in addition to disinfection by burning sulphur.

Dr. S. G. HUBBARD, of New Haven, said that he had no belief in the prophylactic value of belladonna in preventing the communication of scarlet fever. Twenty years ago, in connection with Dr. Tyler, he had tried it. They gave a preparation,

similar to the one mentioned, to adults and children in infected families. The epidemic was a mild and pretty general one. They concluded that the occurrence or non-occurrence of the disease in persons who were taking belladonna was merely a coincidence. Both were of the opinion that no dependence was to be placed on it, or on anything, except, perhaps, fresh air in motion and fumigation of all fabrics in the sick-room. In some cases the disease was carried by clothing which had not been worn by the patient, but had been hanging in his room. Carpets and bedding, also, frequently did not receive the necessary attention. Cases were sometimes spread from a house a month or more after the patient had become convalescent. More than thirty years ago he made a similar set of observations in regard to belladonna. Now he knew of no one, except, perhaps, our homeopathic friends, who had any faith in its prophylactic influence. The eruption of the skin and the affection of the throat produced by the drug were entirely different from the manifestations of scarlet fever. It was stretching the imagination too far to believe that, because belladonna caused an eruption upon the skin and an affection of the throat, therefore it would prevent the disease.

Dr. M. N. CHAMBERLAIN, of Cheshire, reported that he had used sulpho-carbolate of sodium to a limited extent as a prophylactic against the disease with apparently favorable results. The number of cases, however, was not great.

Dr. LEWIS BARNES, of Oxford, believed that very little treatment was necessary. He sometimes gave chlorate of potassium, and had the patients bathed so as to keep the pores of the skin open and allow of the elimination of the poison. He had lost only one case—in a syphilitic subject.

Dr. W. R. BARTLETT, of New Haven, had used both carbolic acid and corrosive sublimate in medical and surgical practice, but was not prepared to give up the former, on account of the poisonous qualities of the latter.

Dr. WHITE expressed surprise at the statement that the disease did not need treatment. It needed treatment just as much as any disease. It was due to a poison in the blood, which could be destroyed before it got into the body, and why not also in the body? Prophylaxis should be the same as the treatment of the disease. Iron and potash were good for the sick, and therefore also for the well who had been exposed to the contagion. By the use of these remedies the severity of the disease was lessened and its progress cut short.

Dr. BECKWITH commented upon the unfavorable prognosis which had been given in puerperal cases, and reported three cases of moderate severity—not mild cases—which he had observed in puerperal women. Each had recovered without kidney or other complications. The disease bred its own kind, and the symptoms should never be interpreted as a septicæmia with a rash.

Dr. Hubbard's summary agreed with his own experience. Belladonna was worthless as a prophylactic. When patients asked him about it, he told them that belladonna should by no means be taken. It was impossible for such a drug to prevent the disease. Experiments in English hospitals had shown that it was ineffective.

It was dangerous to apply poultices and sedatives to the ear. If there was pain in the ear, the physician ought to examine it, or send for an aurist at once. Many persons were deaf from scarlatina. The time had come to examine the ears if they were painful. Many cases could be relieved by incision of the drum.

It was his custom to dress the patient in a flannel garment reaching from the neck to below the feet. By this means, in many cases, renal complications might be avoided. Otherwise it was impossible to keep children covered at night.

In order to limit the occurrence of the disease it was desira-

ble to keep the patients quarantined until desquamation ceased. Three to six, or, better, five to six, weeks should be allowed for this, before they were permitted to go to school or associate with other children.

If there was high temperature or twitching of the limbs, with a tendency to convulsions, the wet pack was the most desirable method of treatment.

Dr. W. O. AYRES, of New Haven, said that it had always been his practice to visit his scarlet-fever patients in the morning, and never to visit other patients, or go home, for at least an hour. By following this plan he had never had reason to suppose that he had carried the disease to his own or other children, although he had attended many cases during severe epidemics. In spite of all his precautions during the prevalence of the disease, at a later time, when he was not aware that there was a case of the disease in the city (San Francisco), his daughter was suddenly taken with it. He could not trace the source of infection. It was an instance of the terrible uncertainty which characterized the disease. He had no confidence in belladonna or any other drug as a prophylactic. The only thing was an abundance of fresh air and absolute disinfection thereby.

He always advised the avoidance of cold water for from six to ten days after the termination of the febrile stage, while the skin was sensitive. He had seen very few of the severe complications, and believed it was due to the avoiding of cold.

Dr. W. H. CARMALT, of New Haven, spoke in regard to the ear complications. He considered the application of remedies to the external ear as worse than useless, as time thrown away. The condition was an acute middle-ear catarrh extending from the throat. For temporary relief of pain, hot applications were useful, but the ordinary mode of application was non-effective. A large poultice to the external ear did no good. The proper way was to fill the ear with hot water, and then to lay on hot cloths. This was a purely temporary means of relief, and should only be resorted to for a few hours. The only remedy was incision of the drum-membrane, and that should be done early.

An effort should be made to prevent the starting of suppuration. This was too much neglected by physicians. The throat and posterior nares ought to be cleansed thoroughly—not by a gargle, or by the finger dipped in alum—but with a probang covered with cotton introduced into the throat. This was difficult to do, and frequently it was necessary to use some force. But, if we expected to do any good, we must do it in that way. Physicians told their patients that they would grow out of the deafness. But, even when seen five, ten, or twenty years after the occurrence of the disease, they had not grown out of it; they had grown worse. The nasal douche, if used carefully by the physician, was very useful, but, used by the patient, very dangerous. It might excite suppurative inflammation of the ear, and two cases of death had been reported following its use. Warm, medicated water snuffed up into the nostrils through a small rubber tube was useful, and there was little, if any, danger of any fluid entering the Eustachian tube.

Dr. H. FLEISCHNER, of New Haven, stated that sometimes he had voluntarily endeavored to communicate the disease to children during a mild epidemic, and last spring, during a severe epidemic, used no care in regard to transporting the disease. He had failed to communicate it to any one. He believed that antizymotics, germicides, and antipyretics were of no use. Mild cases needed no treatment. In severe cases he treated symptoms and relieved restlessness with chloral, pains with opium, and cardiac failure with brandy.

Dr. BECKWITH protested against following Dr. Fleischner's example. Every precaution ought always to be taken to avoid carrying the disease to healthy children. He always endeavored

to see his scarlatina patients last, and not to go immediately to other patients from cases of scarlatina of any grade.

AMERICAN PUBLIC HEALTH ASSOCIATION.

(Continued from page 503.)

Wednesday's Proceedings.

The Care of the Eyes in School-Children was the subject of a paper by Dr. STEPHEN O. RICHEY, of Washington, which, in the absence of the author, was read by the President. The author called attention to the gradual increase of myopia in this country, and compared the improper use of the eyes to dissipation. It had been found that the proportion of children affected with myopia was greater in the higher classes at schools than in the lower classes. Among the causes of the evil enumerated were too prolonged use of the eyes, with a poor light and a bad posture of the scholar, and the fact that slight errors of refraction were overlooked, instead of being remedied before they became pronounced. Progressive myopia could easily be avoided, and the eyes of school-children should be examined every six months. The use of pen and paper should be substituted for that of the slate and pencil, but particular stress was laid upon the strain of reading the same kind of print for several hours in succession.

Cotton-seed Oil as Food was the subject of a paper by Professor CHARLES E. MONROE, of Annapolis, who called attention to the importance of investigating the qualities of this oil as a food, inasmuch as it was in extensive use under the name of olive-oil.

The Sanitary Survey of the School-houses of Indiana was the title of a paper by Dr. E. S. ELDER, secretary of the board of health of that State. In spite of the pride felt by the people of Indiana in their school system, the reader said, there were many defects in the construction of the school-houses, and in other respects, a number of which he pointed out. It was certain, however, that improvement was going on in these matters.

The discussion on school hygiene was opened by Dr. RAYMOND, of Brooklyn, who said that too much attention was paid to the public schools in comparison with what was paid to the private schools. When private houses were used for school purposes, the occurrence of infectious diseases in the family was too apt to be kept secret. The same thing was true of public schools where the janitor's family lived in the building. Nobody ought to live in buildings devoted to school purposes. In Brooklyn, no pupil who had recovered from an attack of infectious disease was allowed to return to school without a permit from the sanitary officials.

The subject was further discussed by Mr. BROOKS, of New York, Dr. THOMPSON, of Kentucky, Dr. REED, of Ohio, the President, Dr. BRYCE, of Toronto, Dr. A. N. BELL, of New York, Mr. L. A. SMITH, of Washington, Dr. G. F. CONN, of Concord, N. H., Dr. WILLIAM BAILEY, of Louisville, Dr. EARLY, of Indiana, Dr. FEE, of Kansas City, Dr. DEVRON, of New Orleans, Dr. GREENE, of Pennsylvania, and Dr. J. F. HIBBARD, of Richmond, Ind. Dr. Fee protested against much that had been said in criticism of the methods pursued in the management of schools, and particularly of the way in which the teachers took care of the children committed to their charge. So far as his own State was concerned, there was not a teacher in St. Louis, or in the whole of Missouri, that did not know better than to teach a child in the first or second grade from written or printed copies, nor one that did not have a good idea of hygiene; and he ridiculed the charge that so much myopia was due to the neglect of the hygiene of the eyes in schools.

Poisonous Cheese.—The subject of cheese poisoning was

dealt with in a paper by Professor V. C. VAUGHAN, of Michigan, who had come to the following conclusions: 1. The toxic material in poisonous cheese is a chemical compound soluble in alcohol. 2. Its production is due to the rapid growth of the *Bacillus subtilis*. 3. The difference between poisonous and non-poisonous new cheese is one of degree rather than of kind.

The Milk Supply of Large Cities was the subject of a paper by Dr. J. C. MORRIS, of Philadelphia. He traced most of the mortality from diarrhœal diseases among infants to the use of adulterated milk. The shipment of milk in small glass jars was advocated, in preference to the use of the forty-gallon receptacles, with the indescribable filth that settled to their bottom, now so largely in use.

A Report on Cholera was received from the National Conference of State Boards of Health, the point of which was, that the general Government should be charged with the work of guarding against the invasion of the country by the disease, and that it should maintain a quarantine service at all the ports of the country, together with a system of warning by telegraph of the departures of vessels likely to be infected.

In the discussion which followed, the principle of quarantine was generally supported, and Mr. Brooks contrasted the system in use with us with the quarantines of Europe. The latter, he said, were brutal, cold-blooded, unnatural, and unnecessary, whereas our own system was merely the proper care of persons and goods that might possibly be infected. He moved that the report be printed and sent to the various officers of the Government. Carried.

The Investigation of Disinfectants, Antiseptics, and Germicides, by the association, for the purpose of disseminating knowledge with regard to these substances among the medical profession and the public, was the object of a series of resolutions introduced by Dr. HIBBARD, of Indiana. The resolutions were referred to the Executive Committee.

The Work accomplished by State Boards of Health was then made the subject of verbal reports by representatives of several of the boards, the general purport of which was that much was being accomplished, and that public sanitary work was sustained and appreciated by the people of the several States.

The Food we eat, the Liquids we drink, and the Adulterations we submit to was the title of an address by the Hon. ERASTUS BROOKS, of New York. After some general remarks on the constituents of the staple articles of food, and on the circumstances that affected it as contributing to the satisfactory nutrition of the body, Mr. Brooks proceeded to the subject of adulterations. The extent of food adulteration was one of the worst signs of the times. No country was free from this public evil, and it was next to impossible to reach and punish these abuses. Coffee had been adulterated until in some instances there was not an ounce of coffee to the pound, and three fourths of the teas sold were impure. Milk was adulterated in many ways, some of which were very injurious, and spices were well known to be largely adulterated. The adulteration of drugs demanded the attention of health authorities. In spirits, especially in wines, the adulterations were much worse than in coffee or general articles of food, and, in 1881, 56 per cent. of 3,861 samples of wine examined were found bad, and 6 per cent. dangerous. Butter should come from the dairy and not from the fat of animals. Glucose might be harmless enough, but, when 35 and 50 per cent. were mixed with honey and maple sugar, the deception was palpable and flagrant. Most kinds of oil were more or less adulterated, and the chief fraud consisted in calling oils by wrong names. Cheese was adulterated with potatoes or bean-meal, and the rind at times contained blue vitriol and arsenic to give it the appearance of age. Other

poisons were used to give the cheese a biting flavor, andlard-cheese was made at twenty-three factories in New York.

The Hygiene of Sailors engaged in the Coasting Trade was the subject of a paper by Dr. WALKER WYMAN, of the Marine-Hospital Service. Special reference was made to the hardships undergone by the oystermen of Chesapeake Bay.

Cremation as a Safeguard against Epidemics was the title of a paper by the Rev. JOHN D. BOUGLESS, of the navy. How, he asked, should we dispose of epidemics? Various means had been suggested. Epidemics, however, still came. No cordon of soldiers, no quarantine, could save us from epidemic, which came by usual and unusual channels. It came on the wings of the wind and walked in darkness. When it came, could we hope to drive it out by sending out quarantine vessels armed with chlorine, coppers, and acids? We might as well pour upon it the spray of sweet violets. Should we fumigate? We might as well burn sweet words. Disinfectants often turned out to be boomerangs, more dangerous than the disease. Whether microbes were the cause of the diseases of the zymotic type or not, they were always present, and certain microbes always produced certain diseases. Disinfectants, freezing, drowning, burying, and desiccating would not destroy any but the feeble microbes. Moisture and warmth seemed to be necessary to their sustenance, and our system of burial furnishes immense magazines of these microbes to the earth. These existed for hundreds of years, and in Medina an epidemic had been caused by digging up the bodies of those who had died of the epidemic three hundred years before. No disease germ could pass through the crematory fire and live to propagate its kind. Cremation was the only true germicide. Pope Clement V escaped contagion by building a wall of fire around his palace. Thirty-three per cent. of our deaths were caused by zymotic diseases, which could be obviated only by cremation. Instead, then, of laying our beloved dead into the cold bosom of earth, let us incinerate them and thus return them to the original ashes from which they rose. Potters' fields were a disgrace to civilization and a pest to the community. Let crematories be established in connection with all public institutions, and let this influential body memorialize Congress for this purpose. But this was not enough. All garbage, all sewage of the cities should be cremated.

The Ultimate Sanitation by Fire was the title of another paper, in the same strain, by the Hon. J. M. KEATING, of Memphis. A general discussion on cremation followed, in which the speakers were about equally divided as to its merits as a preventive of the spread of infection, but no new arguments were advanced.

(To be continued.)

Miscellany.

THERAPEUTICAL NOTES.

Hypodermic Injections of Phenic Acid in the Treatment of Inter-mittent Fever.—According to the "Union médicale," M. Dieulafoy lately reported at one of the meetings of a medical society a case of intermittent fever in which quinine had been given to the extent of 33 grammes in the course of two weeks before any impression was made upon the fever. The disease afterward recurred, and M. Dieulafoy began a series of subcutaneous injections of phenic acid, 2-5 centigrammes of a 1-to-100 solution being inserted night and morning for thirteen days, when the fever was arrested. The treatment was continued for three days longer, and the patient was then discharged cured. In the discussion, most of the speakers were inclined to regard the epi-

dence as conclusive in favor of the use of the remedy in malarial disease, but one of them stated that he placed much dependence on large doses of bromide of potassium after quinine and arsenic had failed.

Phosphorated Peptone for the Vomiting of Pregnancy.—In the same journal M. Judet speaks highly of this preparation, particularly in cases where there is a strumous diathesis. He maintains not only that it is a real aliment to the mother, but that it assists the assimilation of albuminoids, and hence furnishes to the fetus the proteids necessary for its development. He reports a case of obstinate vomiting in the third month of pregnancy, in which all the ordinary remedies had been tried in vain. Large doses of phosphorated peptone (6 to 12 tablespoonfuls daily) were given, all other nourishment being withheld, and in five days liquid diet was resumed. There was no further vomiting, and the patient not only made a good recovery, but nursed a large and healthy infant, although she had not been able to nurse either of her two other children. The peptone was continued in small doses throughout the pregnancy and until the end of lactation. The writer does not pretend to offer any theory as to the action of the remedy, nor does he appear to regard it as a specific; it is simply an aliment, especially to the osseous system, and probably exercises a sort of general tonic effect.

Portable Antiseptic.—"Professor Lister," says the "British Medical Journal," "has recently recommended, as a portable antiseptic, a saturated solution of corrosive sublimate in glycerin, a fluidrachm of this solution being sufficient to convert about four pints of water into a one-in-a-hundred solution." The journal suggests that a more handy way of carrying corrosive sublimate is to have it made up into powders, each containing ten grains of the sublimate and an equal quantity of ammonium chloride. One of these powders, dissolved in a pint of water, forms a solution of the strength of about one in a thousand. The ammonium salt is added on account of its property of rendering the sublimate more soluble.

Antipyrine.—Dr. Rank, of Stuttgart ("Berliner klinische Wochenschrift"), has employed this remedy in fifty cases, and draws the following conclusions: 1. It is a safe and prompt antipyretic in all diseases attended with fever, especially pneumonia, pleurisy, typhus, acute rheumatism, erysipelas, and tuberculosis; and it is not productive of unpleasant after-effects. 2. The temperature is more rapidly lowered after hypodermic injections of the drug than after its internal use. 3. Two grammes should be given as a dose hypodermically, and from four to six by the mouth. In general, antipyrine commends itself by reason of its rapid action and its cheapness, and it may be regarded as a substitute for quinine.

Antipyrine in Diseases of Children.—In the same journal Dr. Penzoldt commends this drug, not only on account of its rapid action, but because of the ease with which it can be administered. As a rough rule, the dose may be regulated according to the age of the patient—one decigramme for each year. The antipyretic action of the drug is secured equally well when it is given by the rectum as by the mouth, but the dose must be at least five times as large. It is to be noted that the pulse does not sink in the same ratio as the temperature, but to a much less extent.

Kairine.—M. Dreby, of Lyons, as quoted in the "Lancet," states, as the result of a series of experiments with this drug, that it can be given in doses of from six to eight grammes, especially in meningitis, acute rheumatism, and typhoid fever; that it is an efficient antipyretic, even when quinine fails; that it acts "by lowering the activity of the tissue changes"; and that ill effects from its use are rare.

Iodoform in the Treatment of Tuberculosis.—In a letter to the "British Medical Journal," Dr. G. H. Mackenzie states, as the result of his observations, that this drug, while it has been proved to cause an increase of the body-weight in phthisis, has no action whatever upon the bacilli of tubercle. "I am in a position to state," he says, "that, whatever its method of administration, and even when pushed to such excesses as to induce mental excitement, in no single case can it be said to have any effect upon these germs." He thinks, however, that iodoform and morphine form a good local application in laryngeal phthisis.

Willow Charcoal in the Treatment of Diarrhoea.—Dr. S. W. Smith writes to the same journal that he has had some experience with this

preparation on shipboard. He advises its use in cases of what he calls "fermentation diarrhoea."

Lotions for Mercurial Stomatitis.—The following formula is given in the "Union Médicale":

Tincture of iodine	4 grammes.
Cinnamon-water	50 "
Syrup of cinnamon	20 "
Distilled water	250 "

To be used as a mouth-wash. If the breath is fetid, the following mixture may be substituted:

Chlorine-water	10 grammes.
Decoction of althæa	300 "
Honey of roses	40 "

Pills for Habitual Constipation.—The same journal gives the following formula:

Extract of Socotrine aloes	1·80 gramme.
Pure ox-gall	1·20 "
Resin of podophyllum	0·15 "

To be divided into ten pills. One pill to be given every evening. As an occasional remedy, a pill may be given morning and evening.

The Infectiousness of a Dead Body.—The "British Medical Journal" says: "There seems a probability of a case of some interest to medical officers of health being brought before the courts. At the Tredegar County Court, in July last, an action was brought by a small grocer, living at Abertillery, against the Medical Officer of Health to the Abertillery Local Board, for the recovery of £50 damages for, as it was alleged, illegally preventing him removing his step-child (dead of malignant scarlet fever) by railway-train for interment in the adjoining county of Glamorgan, at Witchurch, near Cardiff, thereby, it was said, wounding his feelings and causing him pain. The county-court judge, without entering into the case, ruled that cause of action did not lie against the defendant, but against the railway company. He, however, granted the plaintiff's lawyer permission to take a case for argument before the courts in London, providing both sides could agree as to facts. It appears that, on January 20th, the plaintiff's step-child died of malignant scarlatina. The following day it came to the knowledge of the sanitary officer that the parents intended removing the corpse by rail thirty-four miles for burial in the adjoining county. Upon this information the medical officer, looking to the very infectious character of the disease, considered it his duty to warn the station-master against conveying the body in this manner, the effect of which was that it was taken in a vehicle by road to the place of sepulture. As the case appears likely to be heard of again, we refrain at present from any remarks on the medico-legal aspects of the case."

A Further Note on Cascara Sagrada.—Under this title, Mr. J. Fletcher Horne, F. R. C. S. Ed., writes to the "British Medical Journal" as follows:

"In the 'Journal' of March 10, 1883, I published a short notice of the use of *Cascara sagrada* in constipation, showing its use in almost all cases of constipation, particularly those dependent on defective, perverted, or excessive action of the liver, combined with indigestion. Eighteen months' further use, in several hundred cases, has fully satisfied me of the value of this therapeutic agent, and its right to a prominent position as a peculiarly suitable remedy in most cases of constipation. I have also been much pleased with its efficacy in the treatment of hæmorrhoids. By its action upon the portal system, its use often relieves the pain and congestion in those patients who decline surgical treatment. In several cases of hæmorrhoids, following delivery, the use of *Cascara sagrada* for a few days rapidly produced a cure. Combined with glycerin, I find children take it readily; and, as it produces full, easy stools, without nausea, tormina, or tenesmus, it excels castor-oil, senna, and other allied laxatives, as, after its use, the constipation is cured, and not increased.

"I use the fluid extract, prepared by Parke, Davis & Co., of Detroit, in doses, for adults, of from twenty to thirty minims three times a day in sweetened water; and my further observations lead me to think that the best time for administration is half an hour before meals. I feel confident that, after a trial of its virtues, *Cascara sagrada* will find many new friends in the profession."

Original Communications.

THE ASIATIC CHOLERA,

AS IT APPEARED AT SUSPENSION BRIDGE, NIAGARA COUNTY, N. Y., IN JULY, 1854, AND ITS LESSONS;

WHAT WE KNOW OF THE CHOLERA.*

By FRANK H. HAMILTON, M. D.

It seems to me opportune, when the presence of the Asiatic cholera in Europe renders it possible if not probable that it will before long again visit our Continent, to fulfill a promise made thirty years ago to Dr. Sanford B. Hunt, then editor of the "Buffalo Medical Journal," that I would prepare a paper on the cholera as it appeared at Suspension Bridge in the summer of 1854;† and to supplement this with a brief summary of our present knowledge upon this subject.

From 1849 to 1854 there had been several severe epidemics of cholera at Buffalo, but they had never extended in any noticeable degree to the neighboring towns until the year 1854. On the eighteenth day of July of this year the first case occurred at Suspension Bridge, a small village twenty-two miles from Buffalo, and about two miles below Niagara Falls. In a few days it had spread through the village, and especially among the laborers employed by Mr. Roebling in the construction of the bridge, which was then near its completion.

Of the virulence and fatality of this epidemic, Dr. Hunt, who had made three visits to the village, and, therefore, testified as an eye-witness, wrote as follows in the "Buffalo Medical Journal":

"It is also our duty to record a most fatal visitation of cholera at Suspension Bridge, near Niagara Falls. Probably no locality in this country has ever suffered so severely, unless we except Sandusky. But it is doubtful whether even that epidemic, terrible as it was, equaled in fatality, and in the mournful and shocking character of its incidents, the one at Suspension Bridge."

Dr. Hunt then proceeds to give a brief account of his own personal experience. "Many survived," he says, "but six hours after the attack, while in some instances there was no premonitory diarrhea." . . . "The panic was indescribable. Patients went into collapse immediately after their attack, while some perished from congestion." . . . "Treatment, in the majority of cases, availed but little. Nurses could not be procured on the Canada side, and in our rounds on that shore we frequently found men left alone, with a bucket of water by their side, to die uncared for." . . . "Four dead bodies were, in one instance, disposed of 'by burning the shanty in which they lay.'"

Dr. R. J. Rogers was at that time the only physician practicing in that village; and he remained on duty from the beginning to the close of the epidemic, giving himself

little or no rest day or night, until compelled to do so in consequence of his own illness. In reply to a letter recently addressed to him, he writes as follows:

"MY DEAR DOCTOR: I take the first leisure to reply to your letter asking information in reference to the remarkable cholera epidemic which prevailed at this place in July, 1854. The minutes and records I made at the time have been destroyed or lost; but the events of those few days were so stamped upon my memory that a quarter of a century has failed to efface them.

"The visitation was remarkable for the suddenness of its appearance, its short duration, the number of cases, and its terrible fatality.

"About the 15th of July a company of German emigrants were *dumped* upon the banks of the river from the cars, awaiting transportation across the then unfinished bridge. Two or three cases of what were called cholera morbus were reported to me, and, on visiting them, I found unmistakable symptoms of Asiatic cholera. One of them died in a few hours and was left for burial, while the rest of the sick were sent West with their party that evening. On the second night from this—the 20th—a sick traveler or tramp applied at the Bellevue House, kept by Mr. Sock, and, as you will remember, situated under the hill near the bridge, and was refused admission. He sought shelter under a shed in the rear of the house, where he was found dead in the morning. This was the second case recognized as cholera. That same day a ship-carpenter, working on the steamer New Maid-of-the-Mist, was attacked and died in about thirty hours. The vessel was then being constructed at the landing on the river, just below the Bellevue House. On the same day, also, three laborers, boarding at the Bellevue House, died of cholera; and on the 21st or 22d the mother of the hotel keeper died after a few hours' illness. Almost simultaneously with this case and directly opposite, in a shanty on the Canada side of the river, the wife of an Irish laborer was taken sick and died that afternoon. They had a wake that afternoon over the corpse (which means whisky), and, of those engaged in the wake, five died of cholera within twenty-four hours.

"I mention these as the preliminary cases only, for after this the cases multiplied rapidly. On the night of the 24th four strong, healthy men, two of them foremen or overseers, were attacked, of whom three died within twenty-four hours. This was the most fatal night and day, and the cases had become so numerous that it was impossible for me to see them all, much less to give them the needed attendance. By this time also the people had become panic-stricken, and as many as were able fled with their families, thus leaving fewer victims for the disease to feed upon.

"It was almost impossible to get at the number attacked, but it has been ascertained that there were at least eighty deaths on the two sides of the river; and, when we consider the proportion which this number bears to the actual population at that time, this result is appalling. When the disease broke out there were not more than eight hundred on the American side and perhaps five hundred on the Canada side, of which entire number probably five hundred left

* Read before the New York Academy of Medicine, November 6, 1884.

† "Buffalo Med. Jour.," vol. x, p. 181.

almost immediately. We have, therefore, to record the terrible fact that the actual population was decimated by the disease in about ten days.

"Much was said and written at the time by medical men as to the probable cause of the virulence of the epidemic; but, in order to a full understanding of this matter, it will be necessary to state that more than nine tenths of the victims resided on the narrow flats bordering the banks of the river on both sides. Of these, fully one half were employed in the construction of the bridge—wiremen, blacksmiths, and carpenters. Three of the four gatemen died.

"During the whole prevalence of the disease the weather was excessively hot. There had been frequent rains, and the water stood in pools around the shanties, that were huddled pretty close together on the low ground. These, having been hastily constructed, with perhaps one door and one window, were deficient in light and ventilation. All who occupied this low ground, on both sides of the river, used exclusively the water obtained from a sulphur spring situated near the bridge on the American side. This water was clear and cold, and flowed in a copious stream—probably several gallons a minute. Apparently it contained nothing prejudicial to health, but it was strongly impregnated with sulphur.

"The strip of flat land which we have described is, on the American side, from forty to fifty rods wide. The soil, which is so thin that the rocks come to the surface in many places, is clay, covered with a slight layer of muck or alluvium. Across this a large open sewer had been dug to the bank of the river, but this was not yet in use. From the low ground there arose abruptly, to the height of about twelve feet, and extending parallel with the river, a bank, composed of red clay and terminating above in a plateau or level plain, which extended back into the country several miles, through which there had been made recently numerous excavations for railroads and buildings.

"After the disease began to subside, on examination, under the Bellevue House a large amount of filth was found to have accumulated, and also stagnant water. There was no cellar. Two men, brought from Lockport, were employed to clean the premises and remove the filth, and both of them died in a day or two of cholera. I do not remember that any other premises in that locality were found so bad.

"In localizing the disease more precisely, I will state that it was confined mostly to a very small area, not averaging more than a hundred rods in width, and perhaps twice this distance in length, on both sides of the river. There were a few cases among those who had fled from the disease a mile or two back in the country; notably among the latter was the proprietor of the Bellevue House, whom, you will remember, you were called to see, and who died that night.

"One remarkable feature of the epidemic was that, in a majority of the later cases, there was an absence of the usual premonitory symptoms, many of the patients being in collapse within an hour. In the earlier cases, however, there was the usual vomiting, and then rice-water discharges, accompanied with no pain usually, but with great lassitude and dejection, followed by cramps, confined most-

ly to the muscles and tendons of the toes, a gradual lowering of the temperature, profuse sweating and great thirst, the skin assuming a leaden color and losing its contractility, the pulse deserting the wrist, the tongue becoming cold, and the voice husky. As the period of unconsciousness approached, there would be restlessness, and, long after the cessation of the pulse, there would be considerable muscular activity. During the two or three most fatal days I would find the patients within a few hours of the attack with a cold tongue and pulseless, and with such a degree of hoarseness that they could only speak in a whisper, and still they could get up and walk about the room. Some had no vomiting or purging, and lived but a few hours.

"Of all the fatal cases, but five occurred in that portion of the village which was situated above the lower plain just described. The last died on the 30th, and this person was the wife of the writer.

"I have now, my dear doctor, given you all that is within my recollection, and perhaps all that is pertinent to your inquiries. I ought to add, however, that I think we estimated at the time that at least 70 per cent. of the cases proved fatal.

"As to the treatment, I will only state that the efforts to restore warmth to the surface by irritation, or by hot applications, or by stimulating drinks administered internally, were never attended with any satisfactory results; nor would they restore but temporarily the flagging circulation or the sinking pulse. Swathing the patients in wet sheets was thought at first to be beneficial, for it removed the dark leaden color of the skin almost immediately and restored the natural color, the absorption of the water compensating, in a measure, for the loss of the serum of the blood; but in the end it all seemed 'vanity of vanities.' Homeopathy and hydropathy were alike tried by one or another of the sufferers, and they alike failed. The latter form of treatment was tried most thoroughly by Mr. John A. Roebling, the distinguished engineer. He was a great admirer and personal friend of Preisnitz, and, fully believing in his theory, on the morning of that very fatal day he improvised a hospital and had eight patients subjected to that form of treatment, but they *all* died before night.

"If you can glean sufficient from this long letter to give interest to your article I shall feel compensated, for I have always felt grateful for the valuable assistance you rendered me on that trying occasion, as well as to your two distinguished associates in the medical profession, Dr. Sanford B. Hunt and Dr. Thomas F. Rochester. The former was with me three days, and made a short but interesting report of the epidemic in the 'Buffalo Medical Journal,' of which he was then the editor.

"I am very respectfully yours,

"R. J. ROGERS."

The foregoing narration of the circumstances and events connected with this epidemic, not originally intended for publication, but now published by the writer's consent, is so complete and graphic, and furnishes such an exact portrait of what came under my own observation, that I am relieved of the necessity of doing more than to give it my

indorsement, and of adding a few facts communicated to me by Dr. Rogers in subsequent letters, together with a few more drawn from my own personal experience and recollection.

Dr. Hunt, Dr. Rochester, and myself visited Suspension Bridge in response to a request made by Dr. Rogers to the physicians of Buffalo that they would come to his relief, as he had become completely exhausted, and was unable any longer to answer the unceasing demands which were made for medical services. Our visits were made alternately and on successive days, my visit being made, I think, on the 23d, and extending through a portion of the 24th, at which time the epidemic was about at its height of malignancy and of fatality.

Arriving at the house of Dr. Rogers in the afternoon, I left Mrs. Hamilton, who had chosen to accompany me, in the care of Mrs. Rogers, of which estimable lady Dr. Rogers has spoken in his letter as being the last person in the village who, five or six days after my visit, succumbed to the disease. I then proceeded at once to answer two or three urgent calls in the upper village, which was composed of about thirty comfortable residences, and in one of which the patient had died a few minutes before my arrival.

Returning to Dr. Rogers's house, I found Colonel Fiske, subsequently made president of the village, waiting to go with me to the lower village, or "Shantytown," as I shall call it by way of distinction.

Together Colonel Fiske and myself visited almost every house which was occupied, in most of which were one or more sick, or dying, or dead. A number of families had fled hastily, leaving their effects unprotected in their houses. In one shanty lay a dead woman upon a bed, and she was the sole occupant of the house.

Remedies, so far as they seemed to be indicated, were administered from the small satchel supplied with medicines and restoratives which I carried with me; but the principal duty which seemed to devolve upon me, and in this I was seconded by Colonel Fiske, was to urge the people to get away. In many cases this seemed to be impossible. They were poor, and they would have to carry with them their aged parents and young children—their sick and dying and dead; and they must leave the little property they had behind them. If conveyances could be procured, who would take the risks of removing them? Who would receive them into their neighborhood with their load of pestilence? Although I thought then, and do now, that the danger of communicating the disease to other persons in places where the sanitary conditions were more favorable was very small; but those living in the neighborhood of the infected district no doubt thought differently.

That night I was called to Plitcher's Corners, three miles into the country, to see Mr. Sock, the keeper of the Bellevue House, Shantytown, who had fled the day before, but not until his wife had died. In him also the seeds had been planted before he left the Bellevue House, and I found him in collapse. He died in a few hours. Dr. Rogers has been unable to learn whether any members of the family in which Mr. Sock died, or any of the neighbors living in the same village, were affected with the disease or not, but it

may be assumed that they were not, inasmuch as Dr. Rogers would certainly have been called to attend them in case they had been.

On returning from my visit to Mr. Sock, although the day had not begun to break, I found new messages from Shantytown. By the aid of a lantern I again visited many of the houses. Several new cases had occurred; some that I had seen before were dead, and a few of the older cases were slightly better. The air was more close and stifling than it had been during the day. Outside one of the shanties near the bridge—it was now broad daylight—lay a man suffering from cholera who had been refused admission by the woman who occupied the shanty, and I was unable to change her decision. Walking thence across the bridge—and this was the first time I had been able to answer the calls from the Canada side—and going from shanty to shanty, I found the condition of the occupants much the same as I had found them upon the American side. In two of the shanties wakes were in progress.

Returning to the house of Dr. Rogers, and continuing to attend to the calls of such as asked for medical aid until after mid-day, I then left for Buffalo.

I will mention, as additional facts worthy of note, that there had been a protracted drought, followed within a few days preceding the epidemic by copious rains, and that, consequently, as mentioned by Dr. Rogers, the water stood in pools here and there on the low grounds. An open drain had been recently constructed from the Monteaule across the low ground at the north end of the collection of shanties on the American side. From this a good deal of fresh earth had been thrown up, and still lay exposed.

The Monteaule was then being constructed about one hundred rods north of the bridge, and on the highest ground of the neighborhood. Only one person fell sick of cholera who was employed upon this work. There were no shanties near the sulphur spring, and none so situated as that their refuse water or the human excreta could drain into it. This spring was considered so valuable by Mr. Roebling that he subsequently had constructed for it a granite basin, inclosing it with a railing, and it can now be seen just north of the bridge abutment on the American side. Its source is from underneath the abutment. Its flow is less abundant than formerly, and it is less strongly impregnated with sulphur.

On the Canada side, also, extensive excavations had been made, and the ground upon which the shanties were built was much lower than the adjacent ground.

During the progress of the epidemic two or three cases of cholera occurred at Lewiston, a few miles below, and about the same number at Niagara Falls, two miles above. In the latter place it occurred among the laborers employed in excavating a hydraulic canal. It is most probable that the germ was conveyed to both of these places by fugitives from Suspension Bridge, but the disease found no soil proper for its germination, and it died out.

The Bellevue House stood upon piles, two or three feet high, having no cellar, and a good deal of filth had accumulated underneath. In the neighborhood of the shanties there was some degree of uncleanness, but no more

than is usual in such settlements. Many of the shanties, being quite near the precipitous bank of the river, had a natural drainage, which was much to their advantage. In my visits I did not notice any unpleasant odors.

As early as practicable after the commencement of the epidemic disinfectants were procured, and employed freely in and about the dwellings.

There are certain inferences which may be made from this experience, and there are certain lessons taught by it which ought not to be forgotten. It is not pretended that these lessons are new, but only that they have been presented in this instance in such an impressive manner as to entitle them to special notice.

Before attempting to point out and enforce these lessons, I will state briefly what, in my opinion, is the present state of our knowledge upon the main points relating to the nature, ætiology, mode of propagation, and treatment of Asiatic cholera.

WHAT WE KNOW ABOUT CHOLERA.

1. We have no positive knowledge of the existence of a specific cholera-germ.

While the existence of a specific cholera-germ, endowed with the principle of life and capable of growth and propagation when supplied with its proper nutriment, is rendered probable by many facts and analogies, yet such a supposition has not been established by strict scientific observation or reasoning.

I employ the term "cholera-germ," then, only as a substitute for "cholera-infecting material," whatever that may be, and as the term which most nearly expresses my belief as to its nature.

2. So long ago as 1854 or 1855, Professor Filippo Pacini, of Naples, published, in the Italian "Medical Gazette," a paper on cholera, in which he describes a germ or microbe, and to whose presence he ascribed the epidemic cholera. His paper was translated into French and English, and republished in 1865, 1866, 1871, and 1879.

Koch has more recently (1883) discovered in the intestinal secretions of cholera patients a bacillus or spirillum, designated usually as the "comma" bacillus or spirillum, which, so far as his observations have extended, is uniformly present in well-defined examples of cholera, and is not found in any other conditions of disease or of health.

Dr. H. Vandyke Carter, of Bombay,* has found an organism which it is conceded resembles very much the comma microbe of Koch. The presumption seems to be that it is the same, but of which microbe Dr. Carter says that it was not uniformly found in cases of cholera, and that it was occasionally present in cases of diarrhœa and dysentery.

Dr. Maurin and Dr. Lange, as the result of their studies at Marseilles,† announce that they have discovered a mucus, which, in the process of its development, germinates spores, and these in turn germinate a new form of mucus, termed

anaërobium; these latter, sporifying, give birth to the bacilli of Koch; and, finally, the bacilli develop the original mucus, and thus the cycle of life and development is completed. They regard the second form of mucus or anaërobium as the immediate cause of the phenomena of the disease, while they regard the bacilli of Koch as innocuous.

Dr. T. R. Lewis, of the British army, assistant professor of pathology in the army school at Netley, has been studying the cholera also at Marseilles, and he reports as the result of his investigations that the comma bacillus is present in all well-developed cases of Asiatic cholera, but that he has found it also in the salivary secretions of healthy persons.*

It is also stated as a fact, tending in some measure to corroborate the opinions of Koch, that two Swiss physicians, Ritsch and Nicati, experimenting at the Pharo Hospital, Marseilles, under instructions from the French Government, have caused the Asiatic cholera in rats, Guinea-pigs, and dogs by injecting the dejections of cholera patients into the duodenum after tying the ductus choledochus, hoping in this way to prevent the action of the gastric secretions and the bile upon the bacilli.†

Certainly such statements ought to be received with a great deal of hesitation. So far as I am informed, none of these animals have been known to take the cholera under ordinary exposures, and the Egyptian Commission was unable to produce it by inoculation or injection in cats, dogs, mice, rabbits, or hens.

Dogs are the almost universal companions of men in all countries, both in health and sickness, and their habit of eating all kinds of decaying and filthy substances, including human excreta, is well known, yet I have never seen a case of cholera among dogs, nor do I know that any one else has. That these animals should have had some sort of disturbance of the bowels after the severe surgical operations to which they were subjected is quite probable, but that this was of the nature of Asiatic cholera is not, in the light of our experience with dogs, at all probable.

A correspondent of the "New York Times," in a cable dispatch, says that Dr. Klein, a Bombay official and expert, has experimented upon himself by swallowing a quantity of the comma bacilli, and without harm.‡

Professors Finkler and Prior, of Bonn, announce that they have discovered the comma bacillus in the stools of those suffering only with cholera nostras, or cholera morbus.*

Straus, Roux, Rocard, and Thuillier, pursuing their investigations under the authority of the French Government in Egypt during the month of August, 1883, declare, for reasons which they assign, that they do not feel themselves justified in concluding that the comma bacillus of Koch is the cause of cholera.||

Finally, MM. Sicard, Taxier, Loucel, Livon, and Charreyre, members of a commission appointed by the French Academy, and who pursued their investigations at Mar-

* "Med. Record," October 4, 1884, p. 381; October 11th, p. 416.

† "Lancet," September 20, 1884, p. 504.

‡ "New York Times," October 5, 1884.

§ "Med. Record," October 18, 1884, p. 436.

|| "Archives de physiologie," 15 mai, 1884, p. 381.

* "Med. Record," September 27, 1884, p. 350. From the "Lancet" for September 6, 1884.

† "Med. Record," September 27, 1884, p. 350.

seilles, report that the blood of a cholera patient injected into the veins of a rabbit will cause cholera; the perspiration thus injected does not transmit the cholera; the intestinal contents, loaded with bacilli, do not transmit the cholera when injected into the cellular tissue of the peritoneum, into the windpipe, into the blood, or into the intestines; that the comma bacillus is not the cause of cholera; and they conclude by saying: "We know better than our predecessors what the cholera is not, but we do not know what it is."*

We are at least permitted to say, in view of the conflicting testimony to which I have referred, and of many other statements made by less conspicuous observers, that the theory of Koch that the comma bacillus is the cause of cholera has not been established.

8. Even if it were established that the comma bacillus was always present in cholera and never present in any other condition of health or of disease, it would not determine the question whether this bacillus stood in the relation of cause or effect.

4. The theory is defective, also, in that it has not been shown that the ingestion or reception into the human system of excreta containing the comma bacillus will produce the cholera. On the contrary, if we can accept the current reports, there is at least the testimony of one experimenter that it will not.† The inoculations practiced by Koch himself were barren of results.

5. If the fact were demonstrated that the ingestion of choleraic discharges containing either of the microbes mentioned would cause cholera, the question would remain which of the microbes hitherto described was the efficient agent, or whether any of them were, or indeed whether it was not some microbe for the discovery of which the microscope has not yet been invented; and, finally, whether it is a germ of any kind, or only the fluids in which they are contained, and which have undergone some peculiar changes, for the detection of which no microscope hereafter constructed may prove sufficient. By successful inoculation of the germs alone, after they have been completely isolated by cultivation, could they be proved to be the cause of cholera, and this has not been done.

I do not wish to underestimate the importance of microscopic studies; nor can I always accept of the estimate which some seem disposed to place upon them. They have added greatly to our knowledge of disease, and give us encouraging promise for the future; but, so far as cholera and a majority, to say the least, of other epidemic and infectious diseases are concerned, they have not taught a single lesson either in the prevention or the cure. Their germicides kill the microbes when they are attacked outside of the body and removed from their native element, but they are harmless to them when the assault is made inside the human body; consequently, the unfortunate patients continue to die since the supposed discovery of the parasites the same as before.

It is not positively determined that the infecting mate-

rial is not hereafter to be found in the blood or tissues of the body, in the breath, or in some other secretions than the intestinal. The experiments of the French Commission would at least seem to show that it is in the blood.

When, therefore, Koch places in contrast the results of microscopic investigations and the results of experience, declaring that the latter has not taught us the successful treatment of cholera, he permits the reader to draw an unfair inference. The contrast is not unfavorable to experience, inasmuch as it has taught us something, indeed, as will hereafter be shown, a great deal in reference to the treatment of cholera, while microscopical studies have taught us absolutely nothing.

6. The cholera-germ may be conveyed from place to place by clothing or any other textural fabrics, by articles of food, or by water, and by many other animate and inanimate substances.

7. It may be conveyed for considerable distances by the air. How far it can be thus conveyed it would be impossible to say, but probably much would depend upon the force of the wind and other atmospheric conditions. There is, no doubt, a limit to its conveyance by this method, and I have reasons to believe that it can not be thus conveyed beyond a mile or two.

Those who have denied, or permitted themselves to doubt, that cholera can be thus conveyed have, it seems to me, either been inexperienced, or they have closed their eyes to the testimony which the experience of almost every epidemic supplies in such abundance.

8. The theory of Koch that the germ only finds its way into the system through the mouth and stomach is the necessary corollary to his belief that the comma bacillus is found only in the alimentary canal, and that it is the true germ or cause of the disease, and the only medium of its propagation; but it can not be inferred from any facts observed by me in the histories of those epidemics in which I have had a personal experience, nor from anything I have seen recorded in my studies of this affection. That it may be one of the modes of propagation may be admitted, but that it is the sole or even the principal mode of propagation has no foundation other than Koch's unproved, and to me improbable, theory that the comma bacillus is the true germ of the cholera.

9. There is quite as much reason to believe that it is conveyed into the system by the respiratory organs, and that it diffuses itself throughout the entire body through the circulatory system, like any other septic infection, and that the specific symptoms and the specific choleraic intestinal secretions are the results of a general systemic infection. Why the poison expends its force in one direction or another, or why, perhaps, it seeks to eliminate itself through one organ of the body rather than another, can not be explained any more than we can explain the preference of eruptive contagious maladies for elimination by the skin, and the preference of other septic infections for other organs and tissues. It certainly is not necessary to assume, because the intestinal secretions are changed and the intestinal mucous membrane is congested, that the virus was implanted originally in the intestinal canal. The blood, the per-

* "Med. Record," October 25, 1884, p. 467.

† The statement has been repeated more recently by the "Medical Record" (November 8, 1884, p. 523).

spiratory and the renal secretions, and the kidneys themselves, undergo changes quite as marked and distinctive as those which take place in the intestinal secretions and in the mucous membrane of the intestines.

10. It is probable that the cholera germ or virus, although it may have been received into the system, does not necessarily infect the system, or give rise to cholera.

It seems probable that every person living in, or even entering temporarily, a cholera atmosphere receives more or less of the virus into his system, but of those persons thus inoculated many do not suffer in any degree, and others only slightly, while a small proportion are taken sick and die.

It is true also of all other infectious diseases, that inoculation or the reception of the virus into the system does not necessarily produce the specific disease. Especially is this true of all eruptive infectious diseases. But in the case of most infectious diseases a large proportion of those exposed become infected, while in the case of cholera a very small proportion become infected. In other words, a suitable soil, or suitable conditions for the development of the germ, are usually found in the former, while in the latter they are seldom found.

We, of course, must except from this general statement, in regard to other infectious maladies than the cholera, variola in case the patient has been protected by vaccination. Cholera differs also from many other infectious maladies in that one attack affords no protection against a second.

11. The conditions requisite to render the inoculation of cholera by the ordinary methods effective are all those conditions which cause, or coexist with, disturbance of the natural secretions of the alimentary canal, including fear and other depressing mental emotions; the presence in the bowels of undigested, fermented, putrefying, or of other acrid ingesta; deterioration of the air habitually inhaled, from personal filth, and from overcrowding in ill-ventilated apartments; inhalation of the air from putrefying masses of vegetable or animal matter, from stagnant pools of water, or from soils freshly exposed; and, finally, the concurrence of a warm and moist condition of the atmosphere.

Of all the conditions enumerated as favoring the germination of the cholera germ, none are probably so efficient as the inhalation of the vapors arising from a freshly exposed soil, especially if it contains decaying vegetable matter, and the concurrence of a humid state of the atmosphere with an elevated temperature.

The poor, both in cities and in the country, mostly occupy the lowest lands. If these lands are alluvial, and especially if underlaid with clay so as to retain the moisture, they favor the propagation of cholera as well as of other diseases. The preference which most epidemics show for the habitations of the poor is therefore often susceptible of another explanation than that their personal habits are uncleanly, or that they suffer from overcrowding and bad ventilation.

In addition to the testimony furnished by the Suspension Bridge epidemic, as to the relations existing between low and alluvial soils and the propagation of the cholera, I

could add a personal experience in Buffalo and New York, but especially in the former city, through several epidemics. In Buffalo a low and *sandy* plain, bordering upon the lake and wholly occupied by Irish shanties, was almost entirely exempt.

In the report of Mr. Farr, Registrar-General of England, for 1848-'49, may be found a very full and complete statistical statement upon this subject; and after having taken into account, as contributory conditions, density of population, poverty, intemperance, uncleanness, and many other causes, Mr. Farr concludes that the influence of a low and unwholesome soil was by far the most potent exciting cause. "It has been seen," he says, "how rapidly in London the cholera diminishes a few feet above the low ground on a level with the Thames."

This observation was not made for the first time by Mr. Farr. It is as old almost as the existence of the cholera. Exceptions have been noted from time to time, as, for example, in the frequent occurrence of the cholera at Bellary, in India, where an English fort is built upon a granite rock 500 feet high; but in this case, as probably in all other similar exceptional cases, a sufficient purely local cause can be found, and the exceptions do not affect the value of the general law which has been stated.

Need I remind you, gentlemen, of the terrible fatality of this scourge at Toledo and Sandusky, Ohio, in 1849, in the latter of which cities alone seventeen physicians died of the disease? Both of these towns are situated upon low and exceedingly rich alluvial plains.

As to the effect of a fresh exposure of an alluvial soil, or of soils more or less impregnated with decaying vegetable matter, permit me to refer briefly to an experience at Buffalo.

On Saturday, July 24, 1852, a ditch was commenced for the purpose of laying pipes through Ellicott Street, Buffalo. On Monday the work was renewed, and it was opened completely on Tuesday. The excavations brought to the surface a large amount of alluvium underlying made ground of clay and sand. The cholera was prevailing in a mild form in some other parts of the city; but Ellicott Street had always been regarded as healthy, and had almost entirely escaped in previous epidemics. It was occupied by the best class of citizens. There were twenty residences upon the portion of this street corresponding with the ditch. On Monday the first case of cholera occurred among the residents, and on this and the two following days there were nineteen cases and nine deaths. The ditch was closed, by order of the Mayor, on Wednesday, and from this date there were no new cases.*

11. There has been as yet no specific discovered for the treatment of Asiatic cholera. Nor can we entertain much hope that there ever will be. Science has hitherto brought to our knowledge very few specifics for disease, and none have ever been found for any of the infectious epidemic diseases, and, considering the great number of medical men who have earnestly sought to discover a specific for cholera, and the infinite variety of medicines which have been em-

* "Buffalo Med. Jour.," September, 1852, p. 223. My report to the Buffalo Med. Assoc.

played, it would seem that there could remain but little ground of hope that it would ever be discovered.

We have learned from clinical experience, however, in the case of cholera, much more than we have learned in the case of any other infectious epidemic malady. We can not terminate abruptly or abort the small-pox, measles, chicken-pox, or scarlatina. We can only control or modify them, so as to conduct them to safe terminations at their allotted periods. On the contrary, we can and do generally abort the cholera. A large majority of those who are treated by appropriate remedies, and especially if removed promptly from the influence of predisposing causes, recover quickly. To justify a denial of this, it will be necessary to assume that the diarrhœa which, in most cases, precedes the vomiting and collapse, does not usually indicate the presence of the choleraic virus in the system—an assumption which implies that the cholera, unlike nearly all other diseases, has no admonitory prodromes. Such an assumption is unreasonable, and is not warranted by any facts of observation.

It is not often that a patient is saved to whom remedies are not applied until the algid period, or period of collapse, has arrived; but a large proportion are saved by appropriate remedies employed in the earlier stages of the disease. Dr. Yale, in the report on the cholera at Blackwell's Island, hereafter to be referred to, says that, of those brought first to the "diarrhœa hospital," not one died.

The means which have been most successfully employed are essentially those which have long been known to be successful in the treatment of diarrhœa, cholera morbus, and other allied affections. According to my observation, the remedies which have proved most efficient prior to the period of collapse are opium and absolute rest. Opium, in a solid form, should be preferred to morphine, as being less likely to provoke nausea. It should be given to adults, in doses of from half a grain to a grain, every three or four hours until the diarrhœa is restrained, or until moderate narcosis is produced. The production of excessive narcosis is seldom or never judicious, nor should the opiates, as a rule, be stopped suddenly, lest in either case nausea should ensue. Under no circumstances should the patient be permitted to rise, or even to occupy the sitting posture, after taking opium. If for any reason tincture of opium is preferred, it should be combined with tincture of ginger or some other diffusible stimulant. If morphine is used, it should be placed upon the tongue dry, and swallowed with not more than a teaspoonful of water.

As in ordinary diarrhœa, so also in the early stages of the diarrhœa of cholera, in case the stomach or bowels are known to contain highly irritating ingesta, a single brisk cathartic may be first given, and this to be followed, after a sufficient evacuation, by the opiate.

It is not intended to say that other medicines may not sometimes control the premonitory diarrhœa, but only that the writer has found the simple formula described the best.

If one should wish to render the theory of this treatment consistent with the theory of the existence of a cholera germ, it is only necessary to suppose, what seems probable, that the period of life, or of activity of the germ in the human system, is brief, and that the opium holds the secretions in

a normal condition until the germ perishes or the force of its virus is expended.

There is much clinical experience which tends to show that in the human system the period of life or of activity of the germ is brief; and to this we may add one of the conclusions of the French Commission already referred to, namely, that "the blood of a choleraic patient, by cultivation, after a few hours loses its infectious properties."

We may also, I am persuaded, diminish the severity of an attack or arrest its progress by the prompt removal of the patient outside of those atmospheric, telluric, and other influences which are known to cause the development and propagation of the cholera.

12. Removal of an infected person to a perfectly healthy region—that is, a region supplying none of the conditions favorable to the development and propagation of the disease which has been named—does not in most cases cause a propagation of the disease in that region; but, like brands scattered abroad from burning buildings, provided they are not thrown among material already in a proper condition for combustion, they usually cause no further mischief.

LESSONS TAUGHT BY THE SUSPENSION BRIDGE EPIDEMIC.

The inferences to be drawn from the Suspension Bridge epidemic, so far as they have any bearing upon the opinions expressed in this paper, are confirmatory. They may be briefly stated as follows:

1. The cholera germ was brought by the emigrants who were temporarily detained near the settlement of laborers, the first case occurring among the emigrants. So far as can be learned, the emigrants had not suffered from the cholera before, nor did they after leaving Suspension Bridge. Upon this point our information is not positive and definite; but, at any rate, I feel justified in saying that the cholera, if it existed among them before or after their detention, was not in such a degree as to attract the attention of the railroad officials or of others; and this is all that it is necessary to establish for the purpose of my argument. It exhibited no virulence until it was communicated to the Suspension Bridge laborers.

2. That the emanations from a large amount of lately upturned soil, containing more or less decaying vegetable matter, contributed to the propagation and malignancy of the disease.

3. That the elevated temperature, together with the moisture of the atmosphere, constituted an important factor in the causation—a condition, however, which was not limited to this precise locality, although on these low lands bordering the river these conditions were most intense.

4. Dissemination of the infected, or of those persons who might be presumed or were known to carry with them the cholera-germ, did not propagate the disease—or at least in only a very few instances—to places where the topographical conditions were more favorable—and in these isolated examples no epidemics resulted.

WHAT HAVE WE TO APPREHEND IN CASE IT APPEARS AGAIN IN THIS CITY?

To the question which may appropriately be asked in this connection, In case the cholera reappears in this city,

is there danger that it will prove as destructive as it has proved to be in the last epidemics at Naples, Toulon, Marseilles, and in some other towns of Southern France and Italy? I reply, No; and for the reasons that our climate is more favorable, our system of sewerage is better, there are no portions of the city which are relatively so low as to become the recipients of the drainage of the higher portions, we have a smaller proportion of very poor and personally unclean citizens, and, finally, because experience has shown that here, at least, the prompt application of judicious sanitary measures is certain to prevent the spread of the disease.

It would be an affectation of modesty on my part if I were to omit to refer, in confirmation of this statement, to the sudden and violent outbreak of cholera which occurred in the Workhouse on Blackwell's Island, and to its speedy arrest under the application and enforcement of sanitary measures.

The cholera had appeared in great severity and malignancy at the Workhouse, and was spreading rapidly over the Island. On the 1st day of August there were 29 new cases and 10 deaths at the Workhouse. On the 2d there were 33 new cases and 14 deaths. I was at that time chairman of the Committee of Inspection for the Islands, and on the morning of this day the Commissioners of Charities and Correction placed Blackwell's Island unreservedly under my control, so far as its sanitary condition was concerned. On the next day the most important sanitary changes had been made, some of which were very radical, and were in operation. At the close of this day there were reported 30 new cases and 13 deaths; on the following day, August 4th, there were 21 new cases and 4 deaths; on the 5th there were 12 new cases and 7 deaths; on the 6th there were 4 new cases and 3 deaths, and on the 7th, 1 new case and 1 death. Thereafter, until September 23d, a period of forty-six days, there were 27 new cases, or considerably less than one a day, after which it ceased altogether.

Dr. Leroy M. Yale, who was at that time one of the fourteen house surgeons upon the Island, and who remained on duty to the close of the epidemic, made, by request of the Commissioners, a report upon the subject of the epidemic. This report, published subsequently by the Commissioners, is remarkable for the minuteness and accuracy of its statistical labor, and for the value of its many and carefully drawn conclusions. On the 7th day of August, the fourth day after the introduction of the most important sanitary changes, he reports, "the epidemic was virtually at an end."*

But this illustration of what may be accomplished, at least in our climate, is unimportant as compared with what has been done in this great city by the intelligent and energetic action of our Board of Health. Again and again the cholera has appeared in the lower parts of the city, and especially in our crowded tenement-houses, and as often has it been confined to the narrowest limits or speedily "stamped out."

In concluding, gentlemen, I wish to repeat, what I have

intimated before, that I know too well the value of the services which the students in microscopy have rendered to our difficult science to permit me to say one word which could in any way be construed into a lack of appreciation of their skillful, painstaking, and, in this country generally, unrequited labors; but, while we are hopefully waiting the disclosures of this important branch of our science, we must not neglect to give attention to the suggestions and demonstrations of clinical experience, especially when, as in the case of the Asiatic cholera, they have not been by any means barren of practical results.

NOTES OF A CASE OF DERMATITIS HERPETIFORMIS DURING THIRTEEN YEARS.

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THE notes here presented, portraying the disease I have named dermatitis herpetiformis, are of such interest that they are given in full, with the view of directing attention to the many and peculiar phases this remarkable disease may assume. The long period the disease was under observation and the extended notes, which were made at the time, give us valuable information on the natural course of the disease—a point always of importance in the study of cutaneous affections:

H. H. McK., aged thirty-one, an American, and a painter by occupation, was admitted to the Philadelphia Dispensary for Skin Diseases, Philadelphia, July 6, 1874. He was in impaired health, and had been suffering from the skin disease for which he sought relief since 1871—a period of three years. He was of small frame and spare, and was apparently in a state of nervous exhaustion, being weak, tremulous, dyspeptic, and despondent about his condition. He was married, and was temperate in his habits.

The following clear history was obtained: In 1871 the first disease of the skin ever experienced manifested itself in the form of lesions which he describes as "hives." They came unexpectedly and suddenly, and occupied every portion of the surface except the face, being particularly numerous and thickly set about the elbows and knees. They were erythematous in character, and were split-pea and finger-nail sized, raised, and flat. Some were discrete, but the greater number were confluent. The whole surface was pretty well covered with the efflorescence, and was the seat of violent itching. The attack is described as having possessed all the features of urticaria. It gradually subsided in the course of three or four days, when a crop of small, rounded, flat *pustules* began to appear here and there, especially about the knees and elbows, accompanied by itching. They increased slowly in size, and crusted with a brownish, adherent crust. A number of them came out, varying in size from a split pea to a small finger-nail. They all ran a similar course, lasting from five or six days to a fortnight. By the end of four weeks they had completely disappeared, but, almost before the crusts of the earlier lesions had fallen off, a crop of *vesicles* and *blebs*, of all sizes and shapes, suddenly appeared, distributed quite generally over the extremities and upon the face. There were great numbers of them upon the face, and they varied in size here from a pin-head to a hazel-out. Upon the general surface they were mostly small—pin-head and

* Annual Report of the Commissioners of Public Charities and Correction, 1863, p. xv; also pp. 109-197.

split-pea sized. Some were raised and semi-globular in form; others were flat. The lesions, as stated, were *vesicles* and *blebs* having perfectly clear contents, and were without areolae. They were very itchy. There were no signs of pustules.

This attack lasted about two months, new vesicles and blebs appearing from day to day, and gradually subsided. The patient speaks of the experience as having been very trying, not only on account of the presence of the lesions and the discharge and crusting, but also because of the itching.

For several months he remained comparatively well, when a copious mixed eruption—composed of small *vesicles*, *pustules*, *vesico-pustules*, and *vesico-papules*, accompanied with itching—made its appearance upon the regions previously affected. This was the first occasion of the lesions being distinctly multiform. This attack lasted only a fortnight, vanishing quite suddenly, and leaving the skin in a better state than for months. This last form of eruption, however, soon recurred, lasting, as previously, but a few weeks, and, as before, leaving him apparently quite well. He has had many attacks of this character, at intervals of a few months, up to the present time. The disease has thus continued its course, uninfluenced by the varied treatment to which he has been subjected. He does not think that the seasons have at all influenced the natural course of the disease.

It was at this period (July, 1874) that the patient first presented himself to me. He showed the pustular phase of the disease, which had but recently made its appearance. There were about a score of disseminated, split-pea and finger-nail sized, flat, mostly crusted with a yellowish-brown, adherent, flat, ecthyma-form crust, here and there distinctly clustered *pustules*. They occupied the lumbar and sacral regions, the buttocks, and the elbows and knees. They had appeared a fortnight previously, and had been and were still accompanied by itching. The more recent lesions I observed were surrounded by bright-red, highly inflammatory areolae, and were peculiar in that they inclined to crust in their center and to spread on the periphery, forming more or less distinct, narrow rings of pustulation immediately beyond the line of the crust. This feature was not constant, but existed in connection with a number of the lesions, and constituted a symptom which at once arrested my attention.

The case was regarded as an unusual one, the form of disease being entirely new to me, and this observation was so recorded in connection with the notes. The lesions bore a close resemblance to cachectic ecthyma, but the localities attacked were those seldom invaded in this latter disease. The pustular variety of eczema, aggravated by some irritating application, also suggested itself, as did, moreover, impetigo contagiosa. The contents of several of the pustules, as well as the crusts, were at the same time submitted to microscopical examination with a view of determining if any parasite was present. The patient was placed upon a saline laxative mixture, together with full doses of the tincture of chloride of iron. No local treatment was ordered. The case remained under observation three months, and, according to the notes recorded, the patient was in about the same condition at the expiration of this period as upon admission; the skin, however, underwent several decided changes during the three months, having been on one occasion almost well, but the lesions soon reappeared. The disease did not seem to be in the least degree influenced by treatment, whether internal or local, new pustules, small and large, appearing from week to week. In November, 1874, he ceased attending the dispensary, much discouraged. The diagnosis was as obscure at this time as on admission.

In January, 1879, four years after the foregoing note, he presented himself for treatment at the Hospital of the Univer-

sity of Pennsylvania. I at once recognized my former patient of the Dispensary for Skin Diseases. He stated that he was still afflicted, but that until recently it had existed in a milder form, and that he had experienced intervals of from one to six months of comparative freedom, but he had never been entirely free of eruption. The general health had failed considerably, the nervous system had become more disturbed, and he was habitually constipated. During the four years he had employed various internal and local remedies, but without benefit. The general course of the disease had been about the same as when under observation four years before. He had noted four kinds of lesions, which would manifest themselves together or in different attacks of eruption; these were true *pustules*, containing from the beginning a whitish puriform fluid, and of variable size, from a pin-head to a silver quarter-dollar; *vesicles*, containing a clear yellowish fluid, likewise of variable size; *blebs*, varying in size from a split pea to a half-cherry; and, lastly, *papulo-vesicles*, acuminate in form, and exuding a small amount of a serous, gluey, gummy product. The "watery blisters," as he termed the vesicles and blebs, had, on every occasion of their appearance, been very itchy; the pustules itched but little. The vesicles and blebs grew rapidly, reaching their full size in a few days, and were accompanied by but slight inflammation about their bases; the pustules, on the other hand, were always markedly inflammatory. On each occasion of the pustular form of eruption he "felt badly," and was in poor general health. He had had but three or four "pustular attacks," the rest having all been vesicular and bullous. The disease, whatever the form of lesion, always manifested itself in attacks, which would announce themselves at intervals of weeks or months, one scarcely subsiding before another would appear. He does not remember that any of the attacks were preceded by chills or fever. The seasons seemed to exert no influence on the course of the disease. He noticed that frequently the lesions inclined to come out in the form of groups or clusters, four or five appearing within a radius of an inch or two, and often coalescing. The regions invaded have been the same as in the beginning—the face, neck, elbows, knees, sacral region, and buttocks being the favorite localities. The genitalia, hands, and feet have generally been free; the palms and soles have always escaped.

His condition when I saw him in January, 1879, was very similar to that recorded as existing when I first observed the case in 1874, and therefore need not be described in detail; so much did his condition resemble the former state, as regards the general character and distribution of the eruption, that it seemed as though the very same lesions were present. The pustules were the only lesions. They were of all sizes, most of them being as large as dimes and quarter-dollars; rounded or irregular in shape; crusted with yellowish-brown crusts; flat; here and there clustered or about coalescing; in all stages of development, and surrounded by highly inflamed, extended, bright-red areolae. They, moreover, possessed the characteristic before noted of extending around the periphery and just beyond the line of the central crusting. The patient was ordered wine of iron, with three-minim doses of liquor potassii arsenitis thrice daily. With the view of observing the course of the lesions, local treatment was withheld.

March 11, 1879.—The case has been under constant observation since the previous note, six weeks ago, during which time the disease has behaved much as it did on the first occasion I had of studying it. The lesions have pursued a rather slow course, considering their highly inflammatory nature, an average pustule lasting, from the beginning until the crust dropped off, from two to three weeks. Many new lesions, all strictly pustular in character, have from time to time appeared, as a rule, in crops, while the older ones have, at the end of a variable period,

disappeared, leaving persistent dark-red, brownish, pigmented marks. No scars remain. One peculiarity of mature pustules has not been referred to, namely, the tendency for the inflamed skin around the crust to pucker, giving the skin a wrinkled, drawn-up, glistening appearance. The disposition of the lesions to group has always been present, though at times only to a slight extent. It has not, however, been observed with all of the lesions, many appearing singly. As they increased in size there would generally be noted a number of discrete or confluent small, pin-head sized, flat pustules immediately around the circumference of the original lesion in the form of a ring. This feature varied, being much more pronounced in some cases than in others, and at times was wanting. The pustules, however, seemed to grow in this manner, a new ring of minute pustular points springing up every few days around the crust until the lesion reached its determinate size. The crusts were adherent; upon lifting them up, a superficial, reddish excoriation, covered with a slight puriform fluid—as in the case of ecthyma—presented itself. Little or no bleeding occurred. Itching has not been severe, but the lesions have "felt sore."

Three nights ago he was attacked with violent itching of the general surface, accompanied with an efflorescence which he describes as having been identical with certain attacks before experienced on several occasions, and which was plainly urticarial in nature. It began, while in bed, upon the arms, but soon extended itself over the whole surface except the hands and feet, the backs, as well as the palms and soles, remaining free. The eruption was *erythematous* and very red, and exceedingly itchy; so much so that he was kept awake all night. The next day the eruption disappeared, but he felt poorly and complained of loss of appetite and malaise. Last night, just after going to bed, it suddenly reappeared in the same manner as two days before. The attack was preceded by chilliness and malaise; later he perspired profusely. To-day he feels better, and the rash is leaving the surface. The skin, however, is still red; rough in patches; slightly papular and vesicular, and has the appearance on the arms of an erythema multiforme in the stage of declination; scratch-marks abound. It seems as though the attack had been abortive, the development of the papular and vesicular lesions having been checked early in their course.

16th.—During the past five days the eruption has been disappearing, with slight desquamation and considerable pigmentation, some of the patches on the trunk somewhat resembling irritated tinea versicolor. Within the week a half-dozen, large and small, pustules have come on the arms and buttocks, identical with those which have been described.

25th.—A number of variously sized pustules have been appearing here and there over the surface, in particular on the neck, around the navel, on the lumbar and sacral regions, and over the buttocks and thighs. They all incline to dry and crust in the center, sometimes as a depressed, cup-shaped crust, and to spread on the circumference, thus extending their size. Their edges are more or less "puckered" and slightly raised; their areolæ large, dark-red in color, and contracted, presenting a somewhat stellate, radiate appearance. There is now but little itching. He is still taking four minims of the liquor potassii arsenitis, which he has been using for a month, but with no benefit.

June 20th.—Has been annoyed greatly with disease since the last note, which has manifested itself, as heretofore, in the form of distinct outbreaks appearing at irregular intervals. But at no time within the past three months has he been entirely free. The lesions at present are *vesicular* and *bullous*, from the size of large pin-heads to coffee-grains, and are scattered especially over face, arms, and forearms, and over the region of the spinal column. They are accompanied with intolerable itching. Dur-

ing the last six weeks he has been using half-ounce doses of linseed-meal, with the view of improving the nutrition, but without benefit.

June 1, 1884.—Five years have elapsed since the last note, during which period I have not seen the patient until a few days ago. He is still suffering with the disease, having never obtained any relief from the manifold treatment to which he has been subjected. For the past three or four years the attacks have been lighter than formerly, and the lesions for the most part vesicular in character. At the present time the face, neck, and trunk are the seat of small, ill-defined vesicles and papulo-vesicles, accompanied, as before, with itching. The general health is improved, and he is able, when not suffering from an attack, to attend to his daily duties.

I shall make no comments upon the case except to say that it illustrates a typical expression of this peculiar disease, characterized as it is by rare multiformity. It shows almost all of the lesions to which I have called attention in describing the disease,* and upon which its several varieties have been based. In conclusion, I may add that the affection is usually well defined, having distinctive features which enable it to be readily recognized, although it may be confounded with eczema, herpes, and pemphigus, according to the lesions at hand.

THE NEW SPECIFIC FOR RHEUMATISM.

BEING AN ANALYSIS OF ONE HUNDRED AND EIGHTEEN CASES TREATED WITH THE OIL OF GAULTHERIA.*

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(Concluded from page 510.)

The tables given below will show, in a condensed and comprehensive form, the comparative advantages of the two contrasted methods of treatment, and deductions as to their relative value can then easily be drawn:

TABLE I.

	Ol. Gaulth.	Sal. Acid.
Number cured.....	76	72
Number improved.....	8	16
Number of deaths.....	6	2
Total.....	90	90

TABLE II.

NUMBER DISCHARGED	CURED.			IMPROVED.			DIED.		
	O.	G.	S.	O.	G.	S.	O.	G.	S.
Between 1 and 7 days.....	34	36	2	6	3	0			
Between 7 and 14 days.....	21	13	1	4	3	1			
Between 14 and 21 days.....	10	7	3	4	0	0			
Between 21 and 30 days.....	7	7	1	1	0	1			
Between 30 and 45 days.....	4	5	1	1	0	0			
Between 45 and 90 days.....	0	4	0	0	0	0			
Between 1 and 90 days.....	76	72	8	16	6	2			

TABLE III.

76 patients treated by oleum gaultheriæ were discharged	
cured within a total of.....	877 days.

* "Jour. of the Amer. Med. Assoc.," August 30, 1884; also, "Amer. Jour. of the Med. Sci.," October, 1884.

72 treated by salicylic acid were discharged cured within a total of	1,040 days.
The average time under observation of each patient cured by oleum gaultheria was about.....	11½ "
The average time under observation of each patient cured by salicylic acid was about.....	14½ "

TABLE IV.

The average number of days of sickness before admission, of each of 60 patients treated by oil of gaultheria, was about.....	12 days.
The average number of days each of the same 60 remained in the hospital was.....	10½ "
The average total duration of the disease with each of the 60 discharged cured was.....	22½ "

TABLE V.

Number of patients with cardiac complications treated by oil of gaultheria and cured of the rheumatism.....	11
Number improved.....	2
Number that died.....	1
Total number with cardiac complications.....	14

TABLE VI.

	Improved by Ol. Gaul.
Number of cases of chronic rheumatism.....	16
" " " " rheumatoid arthritis.....	3
" " " " gonorrheal rheumatism.....	3
" " " " gouty rheumatism.....	2
" " " " coxalgia.....	2
" " " " syphilitic rheumatism.....	1
" " " " muscular rheumatism.....	1
Total number of cases of chronic forms of rheumatism.....	28

On looking over these tabulated statistics we see by the first table that, out of ninety similar cases treated by each method, the oil of gaultheria has the advantage of four more cases cured by it than by the salicylic-acid treatment, and also in the fact that eight more cases refused to yield to the acid than to the oil, and the patients were necessarily discharged only improved. But the gaultheria apparently loses all this advantage by a record of three times as many deaths as could be attributed to the salicylates. Yet this disadvantage may actually be more apparent than real, because all of the six patients who died had unmistakable symptoms of acute alcoholism, which symptoms there is no reason to believe were induced by the oil of wintergreen. Besides, a corresponding number may have died in the same way under the other plan of treatment, and have escaped the writer's notice, possibly by their having been classified in the indices of the history-books under the heading of "acute alcoholism."

The second table shows more clearly wherein lies the chief superiority of the oil of gaultheria over the salicylic acid, and that is in the greater number of cases cured by it in a moderate length of time. The acid seems to act with just about the same promptness as the oil in a certain number of cases which are readily amenable to treatment, but it is in speedily subduing those more obstinate cases which resist the first assaults of the remedy that the oil has the advantage. Its persistent and oft-repeated attacks at length seem to weary out the disease and to destroy the morbid elements in the system on which it thrives, until at length the malady is completely overcome. The salicylic acid, on the other hand, if it fails to overpower the disease at once,

either yields up the field entirely or its administration must be long persisted in before its efforts are crowned with success. Out of the ninety cases recorded as cured in the table, sixty-five yielded within three weeks to the oil, while only fifty-six succumbed to the acid; and nine cases treated by the latter drug ran along for over a month, to four treated by the former.

The real superiority of the wintergreen over the salicylates is again seen in the third table, where is shown the average number of days each patient who was cured remained under observation in the hospital. It was eleven and a half days for those treated by the oil to fourteen and a half days for those who took the acid—an advantage of three days for the gaultheria.

It would be unjust to suppose that these tables represent the actual duration of the disease after the patients entered the hospital, for in the case of those treated by the gaultheria, and probably also with those treated by the salicylates, it was the custom to keep them under observation for at least two or three days after all the pains and other active symptoms had disappeared, in order to build up the debilitated constitution by tonics and nourishment, as well as to guard against an early relapse. On this account alone an average reduction of about two days and a half from the time of stay in the hospital may safely be made, in order to determine the actual duration of the disease after the treatment by either method was begun. This would leave the average length of the gaultheria treatment as nine days, and the salicylate as twelve. But a still further deduction ought to be made from the time of the gaultheria treatment by reason of delays caused by the substitution of an inferior article, either the oil of birch, or a diluted oil of wintergreen,* during four or five out of the eighteen months of experimentation. With these considerations it is fair to suppose that, under favorable conditions, the mean duration of the disease under the treatment by the oil of wintergreen would not exceed one week.

Again, in the matter of the greater infrequency of relapses the new treatment seems to surpass the old, for, in looking over the histories of the patients treated by the salicylates, it was very remarkable how much more frequent such slight and brief recurrences of the attacks were than was accustomed to be seen in our wards where the gaultheria was used. Under both treatments, however, these mild relapses seemed to yield promptly to a renewal or an increase of the medicine.

In respect to the relative frequency of cardiac complications developing in the wards, there was no noticeable difference, and, besides, the records on this point, under both plans of treatment, were too indefinite and inaccurate to be of much practical value.

As regards the whole duration of the disease as influenced by the oil of gaultheria, some information may be derived from the fourth table, which gives the length of time it had already existed before admission to the hospital in the only sixty cases in which this point was noted in the histories, it being, on an average, about twelve days; and also

* Some of the oil of wintergreen analyzed proved to contain about 25 per cent. of alcohol.

the length of time these same sixty cases remained under observation thereafter, namely, about ten days and a half. This gives an average duration of the disease as twenty-two days and a half, less about two days' and a half retention in the ward after convalescence was complete, making about twenty days as the mean duration of the disease. In this connection some figures collected from Dr. Austin Flint's article on acute articular rheumatism will be of interest. Of thirteen cases noted by him in 1862, in which all medicinal treatment was refrained from, the average duration was about twenty-six days. The mean duration of forty-one similarly treated cases reported by Dr. Sutton in 1865 was, twenty-seven days after admission to Guy's Hospital.* The present methods of treatment, therefore, have a markedly perceptible influence in shortening the duration of the disease.

Our experience corresponded with that of Dr. Flint, Dr. Sutton, and others, in finding the disease more obstinate and of longer duration, though of less frequent occurrence, in females than in males.

The only thing to add in reference to the different classes of chronic cases recorded in the sixth table is that, in looking over the histories of patients treated by the salicylates, it was noticeable that the cases indexed as chronic, and so forth, were proportionately much more numerous than those which had come under our observation. This difference in the relative proportion of acute and chronic cases admitted to the wards where a different course of treatment was pursued could not fail to awaken the suspicion that many obstinate cases, which would have yielded promptly to one class of treatment, were, on account of the failure of the other method, so prolonged in duration that what was perhaps on admission considered an acute attack was at length classed and indexed as a chronic disease.

In connection with the consideration of this drug in its relations to acute rheumatism, it will be appropriate here to record the results of our limited experience in its local use. In a somewhat recent issue of one of our prominent medical journals it was stated that an emulsion, composed of equal parts of the oil of wintergreen and olive-oil, or the ordinary soap-liniment of the Pharmacopœia, was an excellent topical anodyne application to inflamed and painful rheumatic joints. Acting on this suggestion, it was tried in a considerable number of cases, and nearly always with excellent results in giving prompt relief from the acute suffering. Of course, this was only used as a palliative and temporary measure while waiting for the constitutional remedy to impress itself upon the system.

Aside from the employment of the oil of wintergreen as an anti-rheumatic, the writer also wishes here to make a brief statement of the results of his experience in the use of the same drug as a remedy for malarial fever. The trial of it in

this disease was suggested by the similarity of its chemical composition to that of quinine, and also by the close identity of the physiological symptoms produced by an excessive administration of either drug. In the few cases of daily repeated chills in which it was tried, it seemed to speedily check the return of the paroxysms, there usually being none, or but one chill recurring after its administration in the usual dose was begun. Still, in some cases after the withdrawal of the drug there was an early return of the paroxysms.

In summing up the results of our experiments with the oil of gaultheria, a brief recapitulation of the most important points brought out will recall more clearly to mind the advantages of this drug as an anti-rheumatic agent. We have found that it has all the valuable properties of salicylic acid, to which it is closely allied. Its action is more prompt and efficient in obstinate cases. It has a more agreeable taste. Relapses under its use are less frequent. The unpleasant effects of over-dosing are no greater, and it is less depressing. Cardiac complications are no more frequent. It is important not to substitute the oil of birch or a diluted article for it. Large and frequent doses are necessary to get the best effects. It is an efficient palliative remedy in chronic and irregular forms of rheumatism. It is a local anodyne to inflamed joints.

It only remains now for us to add the reason why in this article the oil of gaultheria has been contrasted in its therapeutical properties with salicylic acid. This is because the salicylic treatment of rheumatism is the one most popular at the present day, and has given more satisfactory results in the acute form of the disease than any other remedy heretofore discovered. If, therefore, it can be shown that a more recent plan of treatment, carried out under similar conditions and in the same climate, surpasses in its results the one up to the present time considered the best, it is unnecessary to discuss its advantages over all inferior remedies. So, as Dr. MacLagan, in 1876, announced that he had discovered in salicin a specific for acute articular rheumatism, the foregoing facts and statistics have here been presented in order to substantiate the statement that we now have in the oil of gaultheria a remedy still more worthy to be called a specific, for by its aid we can speedily cure nearly eighty-five per cent. of all cases of this disease.

A CASE OF PENETRATING FRACTURE OF THE CRANIUM; RECOVERY.

By G. E. BUSHNELL, M. D.,

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W. L., a miner, forty-nine years of age, was injured by the explosion of a blast, January 30, 1882, a fragment of rock striking his forehead and fracturing the skull. He was stunned by the blow, but before help arrived recovered his senses sufficiently to notice that the ground about him was bespattered with brains. With assistance he walked to a house distant about twenty rods. The writer saw him two hours after the accident. The patient was partially conscious. There was a perforation of the skull at the right frontal eminence about an inch in diameter, through which a large mass of brains protruded, extending to the eyebrow. This protrusion was so extensive that the inner surface

* Within the past twelve years, the average number of days one hundred and thirteen patients remained in Roosevelt Hospital under the salicylate treatment before they were discharged cured was, according to recently published statistics of Dr. Charles H. May, about twenty-five, while the whole duration of the disease averaged forty-two days. ▲Against these figures we show a stay of only nine days in the hospital, and a total duration of the disease as about twenty days.

of the cranial vault was visible for a distance of at least two inches. No foreign bodies could be discovered within the cranium, except a small piece of bone. Some strips of lacerated brain-substance, weighing about two drachms, were cut off, and the remainder of the prolapsed portion was cautiously cleansed with carbolized water and returned, as far as possible, to the cranial cavity. The brain, however, remained on a level with the skin of the forehead until healing was far advanced. The wound having been bandaged, the patient was placed upon the right side to insure drainage of the wound, and the attendants were directed to enforce that position. During the first few days after the injury the patient lay in a state of semi-consciousness, answering when spoken to, but not intelligently. The discharge from the wound was abundant, consisting apparently of broken-down brain-tissue. Small pieces of bone were removed on several occasions. Black specks began to appear in the discharge. These rapidly increased in number, and continued for several weeks to be profuse enough to blacken the dressings.

Fortunately, the explanation of this, at first sight, rather puzzling phenomenon was furnished by the case of the other workman present in the shaft at the time of the explosion. This man escaped serious injury, but his skin was riddled by small fragments of rock, many of which penetrated to the depth of an inch. On examination, two hours after the injury, the probe failed to detect the presence of a foreign body in any of these wounds, but on the following day masses of mud were readily squeezed from them all. The stone which inflicted the wounds was found to be a hardened clay, which, although of the consistence of ordinary rock when first mined, on exposure to air and moisture rapidly softened into an impalpable mud.

Neither the character of the injury nor the patient's symptoms excited at first any suspicion of the existence of compression. But about the eighth day the breathing changed in character, growing gradually stertorous, and there was incontinence of urine and feces. A thorough exploration of the wound was decided upon. The operation was performed on February 10th, with the assistance of Dr. J. C. McGuire, Acting Assistant Surgeon, U. S. Army. All of the edge of the cranial aperture being accessible to observation, except the inner and lower portion, which was covered by the integument, a vertical incision an inch in length was made through the soft parts at this situation. A narrow strip of bone at the inner edge of the fractured orifice was found to be fissured and slightly depressed. An attempt to elevate the depressed bone was made, using the outer and upper edge of the perforation as a fulcrum. Slight force had been exerted, when the edge of bone which supported the elevator suddenly sank, and an elevation appeared two inches posteriorly and externally, showing the existence of a large fragment which had hitherto escaped displacement. This was reduced so easily and perfectly that it was thought best not to remove it. A cut with a Hey's saw was then made through the outer table along the line of the fissure, after which the depressed bone was readily elevated. Two pieces of bone were then discovered well to the inner side of the perforation, which had been wedged in beneath the depressed bone. These were removed, and with them a bit of black felt from the patient's hat. After this operation the patient became conscious, and convalesced without an unfavorable symptom. He began to do light work in April. At that time his friends noticed that he was very absent-minded, but his condition gradually improved in this respect. At present the cicatrix does not pulsate, and the cranial aperture is occluded by a firm septum nearly as hard as the surrounding bone. The patient is able to do with ease the heavy work which his occupation makes necessary, and, except for an occasional headache, his health is very good.

With regard to his mental condition, so far as can be judged from infrequent personal observations and from the statements of his friends, it has not been permanently impaired by the extensive loss of brain-substance.

Aside from the possibly unique mode of elimination of the foreign body from the cranial cavity, this case is worthy of note on account of the rarity of recovery from extensive brain-lesions in persons advanced in years.

FORT ELLIS, M. T.

NOTE ON THE TREATMENT OF PUERPERAL ECLAMPSIA.

By JAMES F. SULLIVAN, M.D.,

SAN FRANCISCO.

I HAVE just been reading in the *Journal* of August 16th some very interesting accounts of cases of puerperal convulsions, reported at a meeting of the New York Obstetrical Society, and venture to give the outline of a course of treatment which has proved so eminently satisfactory in my last six cases that I now no longer dread that frightful complication of labor.

In an unusually large obstetrical practice of about thirty-six hundred cases, I have met with thirty-three cases of eclampsia, exclusive of mild cases of a purely hysterical character. Of course, in cases complicated with uræmic poisoning from organic disease of the kidneys (with partial or almost total suppression of urine) no set plan of treatment can be laid down, but we know that the urine may be heavily charged with albumin toward the end of pregnancy without the existence of organic disease.

The first indications of treatment are to relieve the bowels by free injections and three drops of croton-oil on the tongue, together with other purgatives as required.

If, however, one or several convulsions have already occurred, I inject hypodermically, without delay, twenty drops of fluid extract of veratrum viride and half a grain of morphine.

If the pulse is full and tense, free bleeding from both arms is a most important measure.

These means having been resorted to, the next convulsion is delayed much longer than usual, and is far less severe. After an interval of fifteen minutes, if the pulse has not yielded in force and frequency, ten drops more of veratrum viride are to be injected, and so on every fifteen minutes *till the pulse does yield*, and then the convulsions have always ceased, in my experience, without any subsequent ill effects to mother or child.

The action of veratrum viride in these cases is simply a mechanical proposition—reducing the force of the circulation, thereby relieving the brain pressure—and if the case has been seen in the beginning, before effusion has taken place, recovery is almost certain. Nor do I consider forced delivery a wise or necessary measure unless the os is dilated or easily dilatable. If the os is rigid, or if, as frequently happens, no labor-pains have occurred, I believe that no effort should be made to hasten delivery. If the term of pregnancy has fully expired, the morphine and veratrum will relax the os, and labor will generally progress naturally

without a return of the convulsions. In one of my cases, in which the woman, a primipara, was in convulsions for three hours and unconscious for twenty-four, labor did not occur for a week, and then came on very favorably, with no return of the convulsions, and terminated naturally with the birth of a healthy child.

NOTE.—These doses of veratrum viride may appear large, but violent diseases require heroic treatment. The last edition of the "United States Dispensatory" speaks of veratrum viride as "a prompt, thoroughly efficient, and at the same time very safe remedy—very safe, since it is almost incapable of producing death in the robust adult unless used with great recklessness and in repeated doses."

A CASE OF EXCISION OF THE SHOULDER JOINT FOR DISEASE FOLLOWING INJURY.

By W. R. BARTLETT, M. D.,
NEW HAVEN, CONN.

In June, 1878, I was called in consultation by Dr. S. D. Gilbert, of this city, to see Arnold N. Spencer, aged about eighteen, from the country, of a scrofulous temperament, who was suffering from the effects of a bruise in the vicinity of the shoulder joint, caused by being run over by a wagon about three months previously. On examination, there was found a sinus situated at the lower border of the anterior fibers of the deltoid. On probing, the bone was found to be extensively diseased. It was determined to make an exploratory incision along the course of the sinus, and, if the necrosis proved to be of limited extent and superficial, to remove the diseased portion; but, if the whole bone was involved, as seemed probable, to excise the joint. The patient having been etherized, I proceeded to do this, the incision being made at the seat of the sinus about three inches in length, upward and downward, between the two heads of the biceps. It was soon found that excision would be necessary, as the whole bone was much softened and the joint evidently diseased. About three inches of the upper portion of the shaft of the bone, including the head, were removed, the bone having been sawn through with a chain saw at the lower limit of disease. The bone was removed in small pieces, as I was able to detach them with a gouge and elevator, that portion of the head above the anatomical neck being removed in one piece. The operation was performed without the division of an artery and with but little injury to muscle, as much of the periosteum being preserved as was possible, which was limited, owing to the softened condition of the bone. Dr. Gilbert attended to the case subsequently, the principal dressing being daily syringing of the wound with a solution of carbolic acid in water, the limb being kept in an easy position upon a pillow, the wound filling by granulation. The patient did well, and, as soon as he was able to be about, the arm was placed in a sling. In about two months the wound was entirely healed. The result of the operation has been most excellent, at the present time, the patient having a strong and useful arm, with almost complete movement of the arm overhead as well as below, and he is able to do an ordinary day's work with it. There is about two inches and a half of shortening, with some production of new bone. The result obtained, and especially the preservation of upward movement, I believe to be largely due to the careful manner in which the operation was performed, and the preservation of the deltoid.

The fact that excision for disease is comparatively rare (Ashurst, for instance, having met with only one case*)

* See "International Encyclopædia of Surgery," vol. iv, p. 478.

and the unusually good result obtained appear to me to make the case worthy of record, which I now detail after my first inspection of the result. Since the operation, the young man has suffered from abscesses in the groin and anal region, through which several small pieces of bone have escaped while under treatment by Dr. Gilbert, and at the New Haven Hospital, thus indicating involvement of the pelvic bones. At the present time there are no sinuses open and the patient is in fair health, though of a phthisical tendency, having had several hæmorrhages.

Book Notices.

BOOKS AND PAMPHLETS RECEIVED.

Micro-organisms and Disease. An Introduction into the Study of Specific Micro-organisms. By E. Klein, M. D., F. R. S., Joint Lecturer on General Anatomy and Physiology in the Medical School of St. Bartholomew's Hospital, London. With 108 Engravings. London: Macmillan & Co., 1884. Pp. xii-195. [Price, \$1.]

The Elements of Physiological Physics: an Outline of the Elementary Facts, Principles, and Methods of Physics; and their Applications in Physiology. By J. McGregor-Robertson, M. A., M. B., C. M., Muirhead Demonstrator of Physiology, etc., in the University of Glasgow. Illustrated with 219 Engravings on Wood. Philadelphia: Henry C. Lea's Son & Co., 1884. Pp. xii-528.

The Treatment of Uterine Displacements, including Prolapsus, Anteversion, Retroversion, Antelexion, and Retroflexion. By W. Eggert, M. D. Second Edition, Illustrated. Chicago: Duncan Brothers, 1884. Pp. 136.

Dental Caries: a Critical Summary; and the Prevention of Dental Caries. By Henry Sewill, M. R. C. S. and L. D. S. Eng. London: Baillière, Tindall & Cox, 1884. Pp. 66.

Practical Recommendations for the Exclusion and Prevention of Asiatic Cholera in North America. An Address delivered at the Opening of the National Conference of State Boards of Health, St. Louis, October 13, 1884. By John H. Rauch, M. D., Secretary, Illinois State Board of Health.

Contributions to the Anatomy and Pathology of the Nervous System, based on Researches conducted in the Private Laboratory of E. C. Spitzka, M. D. Series III, No. 3. Singular Case of Vertebral Disease, etc. By Richard Mollenhauer, M. D., Physician to the Northeastern Dispensary.

Abstracts from Papers on Hydatid Disease, etc. By James W. Barrett, M. B., M. R. C. S., etc., London. London: Wyman & Sons, 1884.

De las Cataratas Hereditarias y de su Trasmision principalmente á los Individuos de Sexo Igual al del Paciente Originario. Por el Dr. D. Luis Carreras-Aragó, Profesor Libre de Oftalmología, etc. Barcelona: E. Ullastres, 1884.

Club-Foot. Is Excision of the Tarsus necessary in Children? By De Forest Willard, M. D., Philadelphia. [Extracted from the "Transactions of the Medical Society of the State of Pennsylvania."]

On Oxygen as a Remedial Agent. By Samuel S. Wallian, M. D. [Reprint from the "Medical Record."]

An Aid to Materia Medica. By Robert H. M. Dawbarn, M. D., late Resident Physician to the Nursery and Child's Hospital. New York: J. H. Vail & Co., 1884. Pp. 86. [Interleaved.]

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THE PROBLEMS OF THE CHOLERA.

It does not seem at all likely that the problems presented by the cholera will soon be solved, either from the sanitarian's point of view or from that of the practitioner of medicine. Those problems are engaging the attention of the profession, as well as that of the general public, more and more; and in this country, far removed as it is from the scenes of the present prevalence of the disease, the same thing is true, as is shown by the prominence given to the subject at the two great sanitary meetings lately held in St. Louis, the National Conference of State Boards of Health and the annual meeting of the American Public Health Association, by the numerous and carefully considered addresses and circulars relating to it that have emanated from two or three of our western State boards of health (either from those boards in their corporate capacity or from the distinguished sanitarians who are connected with them), and by the fact that two very remarkable papers on cholera, dealing with it chiefly from the standpoint of State medicine, have recently been read before two of our New York medical societies by gentlemen to whom the profession always listens with the greatest attention, and who never write papers for the purpose of bringing themselves forward, but solely in the interest of science and humanity. We refer to Dr. Flint's paper, read before the New York County Medical Association, which was published in our issue of October 25th, and Dr. Hamilton's paper, read before the Academy of Medicine last week, the full text of which we give in this number of the journal.

The germ theory of the disease excites, of course, the liveliest scientific interest, and it is practically with that theory that both Dr. Flint and Dr. Hamilton deal. Each of these gentlemen has given a remarkably fair and clear statement of Koch's bacillus doctrine, but neither of them regards it as proved. Further experience, further clinical observation, a more copious collation and a closer digest of facts bearing upon the natural history of the disease, are necessary to the solution of the question. The first step in such an inquiry, it seems to us, is to distinguish between what is essential to the germ theory and what are the comparatively immaterial details enunciated by Koch. It is quite probable that by a plan of exclusion those of the latter that are untenable may very speedily be sifted out. To begin with, the facts at present known to us seem to warrant a flat denial that so short-lived an organism as Koch makes his bacillus out to be, at least as regards its morbid power, can be the sole cause of the transportation of the disease to the vast distances that it has been known to travel over with little, if any, manifestation of its disease-producing power on the way. "In 1873, for example," says Dr. J. H.

Rauch, the accomplished secretary of the Illinois State Board of Health, in his address before the National Conference of State Boards of Health, "there were outbreaks of epidemic cholera at Carthage, Ohio, Kandiyohi County, Minnesota, and Yankton, Dakota, caused by cholera poison packed up in the household effects of emigrants in Holland, Sweden, and Russia, respectively; these emigrants sailed from healthy ports, in healthy vessels, and were subjected to the usual sanitary requirements of the period. They passed through New York and all the intermediate territory without injury to the public health. But when their infected goods were unpacked in the interior of the continent they liberated the poison which gave rise to the local outbreaks." Who can bear such facts in mind—and they are by no means exceptional—and yet cling to the idea that a cryptogam that is killed by desiccation, that under circumstances most favorable to its death-dealing career goes through the allotted period of its evolution within a few days at most, and that is incapable of passing, like the small-pox germ, into a "resting stage," can have been the real cause of such outbreaks? Either Koch's bacillus is not the cause of cholera, or else its life-history has not been correctly described by Koch.

The reports that the bacillus has been swallowed with impunity prove nothing, unless we decline to accept the doctrine, held by Koch, that a disordered state of the alimentary canal is a prerequisite to the production of the effect. That we must decline to accept that doctrine seems to us very probable. We are quite willing to admit that there may be some truth in the popular idea that a perfectly healthy system often successfully opposes the pathogenetic action of a contagium, but that is a very different thing from admitting that an unhealthy state of the system is really necessary to the action of the contagium. Even this may be true with regard to some of the infectious diseases, diphtheria for example, although we do not wish to be understood as making any statement to that effect; but it seems to us in the highest degree absurd to inculcate such a doctrine with regard to cholera, a disease which runs its course quite as destructively among those who are in perfect health as among others, or at least with so little difference that it is not worth mentioning.

Such considerations as these do not disprove or even materially weaken the germ theory properly defined; they do not even deal a blow at the comma bacillus theory; but they should, we think, compel a narrowing of the theory down to its essentials, and serve to show what abundant need there is that experimental investigations should be seasoned with the grain of salt that common sense may be able to furnish, and submitted to a final comparison with deductions that may be as fairly drawn from ordinary observation as from technical research. Truth must be consistent in all its parts.

Admitting, with Dr. Hamilton, that thus far clinical observation has taught us more about cholera than the microscope, it must still be confessed that the remedial art is well-nigh powerless for its cure. Notwithstanding the great usefulness of opium in the premonitory stage, patients do pass on to the algid stage and die in great numbers. The question of prevention, then, remains uppermost, and the means of prevention are

quarantine and local sanitation—neither the one nor the other alone, but the two together. In the presence of such a danger as is involved in an invasion of the cholera, let there be no petty wrangling as to which of these two measures is to be relied upon, but let us avail ourselves to the utmost of both. Believing that this is the true course to pursue, we consider it an occasion for congratulation that the inland boards of health in general seem to sustain it. We may trust to them for local sanitation, and we may trust to the Marine-Hospital Service to enforce an efficient quarantine.

LISTER ON CORROSIVE SUBLIMATE.

As one of the London medical journals remarks, Sir Joseph Lister's addresses are always "drawing." This was notably the case with his recent paper read before the Medical Society of London. The importance of the subject, as well as the speaker's prominent connection with it, was enough to win for him a large and appreciative audience.

Apart from the scientific value of his statements with regard to the antiseptic properties of corrosive sublimate, and especially his interesting experiments with the albuminate, or, rather, mixture of the bichloride of mercury and blood-serum (1 part to 100), there remains a higher lesson. We have seen the rise and spread of his system, have heard Lister overwhelmed with laudation which would have long ago turned the brain of a smaller man, and convinced him of his own infallibility, but he, the great teacher, whose words are received with reverence by thousands of disciples, does not hesitate to acknowledge his failures as promptly and openly as his successes.

"When, in an address delivered at the opening meeting of last session, I expressed myself in what some of my hearers regarded as terms of overweening confidence in the trustworthiness of antiseptic treatment, I little thought that a year later I should have to tell you of failures on my own part."

It is such confessions as this that strengthen our admiration of the man, while they increase our respect for the teacher.

Crowned with honors, all of which have been justly earned, here is one who is not done with learning, even from his own mistakes. Such a man can not be narrow, he can not be an unsafe leader. Whatever may be said against "Listerism," the opponents of that system should not forget that its author has taken a long stride ahead since he promulgated his original doctrines.

MINOR PARAGRAPHS.

AN INTERESTING OUTBREAK OF "HORSE-POX."

At a recent meeting of the French *Académie de médecine*, as we learn from the "Gazette hebdomadaire de médecine et de chirurgie," M. Blachez related the particulars of an outbreak of casual "horse-pox" among the she-asses used for giving suck to the inmates of a nursery where only syphilitic children, or children supposed to be syphilitic, are received. One of the children was found to have a large ulcer on the lower lip, with considerable swelling of the part, and at the same time a deep, indurated, discharging excoriation was found on the teat of an ass that had suckled the child. It was ascertained that, a fortnight before, the same ass had suckled a child with a specific ulcer of the tongue. It was hastily inferred that this child had

infected the ass and (mediately) the first child with syphilis, but Professor Bouley, the veterinarian, was asked to investigate the case, and he decided that the disease was really "horse-pox," originating from a vaccinated child. The disease spread among the asses of the establishment, and "cow-pox" was produced in two cows by inoculation from one of the asses.

A NOVEL REMEDY FOR BALDNESS.

UNDER the caption "*Le vaccin pilifère*," the well-known Lyonnese syphilidologist, M. Diday, in a recent issue of "*Lyon médical*," shows either that he is ready to clutch at the veriest straw in the hope of rehabilitating his bald pate, or else that he is the most incorrigible joker in all France. The case that he makes the text for his imaginative article was that of an infant, the daughter of a physician, who was vaccinated at the middle of each thigh, in front, with cow-pox virus furnished by the city vaccine service of Lyons, in the shape of lymph on a glass plate. The local inflammation was considerable, but everything went on as was to be expected until the sixtieth day, when the scars, still red, were found to be surrounded, each one of them, with a fine growth of red hair—*roux de vache*, as he is particular to mention. What an opportunity for the *ad captandum vulgus* would an occurrence of this sort have furnished to the caricaturists who, eighty-five years ago or so, took such delight in picturing the bovine characteristics which, they averred, were sure to fasten upon the unfortunate subjects of "the new inoculation!"

But the point of the story is yet to come. The child's father called M. Diday's attention to three or four hairs, evidently cow's hairs—"petits, mais très visibles à l'œil nu"—on the glass plate. Straightway the narrator of this stirring tale began to build castles. The hair, or at least its germ, had doubtless been inoculated or transplanted, he concluded, and what a capital opportunity there was of regaining his own lost locks! He besought the child's father to vaccinate him on the top of the head with the same virus, but we grieve to relate that his request was not complied with, and that, for the present at least, the world has lost the revelation that might otherwise have been given to it.

AN ABBOT AND HIS ERRING PARISHIONER.

"*LYON MÉDICAL*," quotes the following edifying tale from the "*Journal de médecine de Bordeaux*." The ecclesiastics, as is well known, have fallen into the bad habit of dabbling in medicine and pharmacy, pretending to know them as well as the Gospels. An abbot named X. was lately the victim of this unfortunate propensity. One of his female parishioners, finding herself in great suffering, consulted a physician in the neighborhood, who regretted to find that she had a well-marked gonorrhoea, and accordingly prescribed copaiba and cubeb in liberal doses. Before taking these poisons, the fair one thought it prudent to ask the curate what he thought of them. The latter looked at the prescription, and exclaimed, "Balsamics, those are used for the chest. Yours is weak. You can take them." And, generous to the last, he wrote these words across the prescription, "Furnish at my personal expense." The story goes on to say that an occasional sly laugh is still called up at the apothecary's by a perusal of the indorsement on that prescription.

REMBRANDT'S TULPIUS AND HAMMAN'S VESALIUS.

WE have received from the Berlin publishing house of Herr E. H. Schroeder a beautiful lithographic reproduction of each of these famous paintings, commonly known as "Andreas Vesalius at the Dissecting-Table" and "La leçon d'anatomie." In

the form of inferior copies, whether in lithography or as the thrice-accurSED "chromo," these pictures are tolerably well known to the medical profession in this country, but these lithographs, by Milster and Süssnapp, respectively, ought, by their great excellence, to displace the coarser attempts we have alluded to. It may interest those of our readers who are familiar with the *leçon d'anatomie* to know that the group consists of Nicolaus Tulpius, Jacob Bloek, Hartman Hartmansz, Adriaan Slabbaan, Jacob de Witt, Mathys Kalkoen, Jacob Koolveld, and Franz van Loenen.

THE MEDICINE STAMP TAX IN GREAT BRITAIN.

From a dainty little brochure on this subject, by Mr. C. E. Meeterke (published by Wyman & Sons, London), we gather certain information in regard to the marvelous credulity of the people, who, it seems, really suppose in many instances that the Government stamp affixed to a bottle of any proprietary compound is an official guarantee of the purity of the nostrum, if not of its efficacy. In view of this state of things, we can readily understand that the Stamp Act, far from discouraging the nostrum trade, has very likely had quite the opposite effect, and we think that Mr. Meeterke has done a good deed in publishing this succinct account of the many arguments that may be brought forward to show that the true interests of the people would be served by an abrogation of the tax.

NEWS ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending November 11, 1884:

DISEASES.	Week ending Nov. 4.		Week ending Nov. 11.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid Fever.....	41	22	38	13
Scarlet Fever.....	33	1	46	9
Cerebro-spinal meningitis....	3	3	3	2
Measles.....	52	10	102	13
Diphtheria.....	63	36	72	38

The Cholera in Europe.—Against the continued decline of the disease in Italy, we have the unsatisfactory news of its prevalence in Paris to an extent that seems to have excited considerable alarm, although perhaps this feeling is in a great degree to be imputed to the discovery that there has been more or less of cholera in the city through the greater part of the summer, but that the fact has been withheld from the public. According to a press dispatch dated Wednesday, there were about fifty deaths a day—certainly not a large number in proportion to the population. There are contradictory reports as to the existence of the disease in Brussels and in Halle.

The Health of Michigan.—It appears by the returns made to the State Board of Health for the five weeks ending November 1st, for a copy of which we are indebted to the secretary of the board, Dr. Henry B. Baker, of Lansing, that there was an increased prevalence of influenza, quinsy, bronchitis, typhoid fever, pneumonia, typho-malarial fever, and neuralgia, while that of the diarrhoeal diseases and the strictly malarial fevers decreased.

The New York Academy of Medicine.—At the next meeting, to be held Thursday evening, November 20th, Dr. V. P. Gibney will read a paper on "The Surgical Management of Rachitic Deformities of the Lower Extremities." Dr. Gibney invites discussion on one or more of the following points: I. Cases that can safely be left to Nature. II. Cases for medica-

tion and hygiene. III. Manual force and retentive splints. IV. Apparatus (cases suitable for it; the best form; results). V. Osteoclasia (the selection of cases; the selection of an instrument). VI. Osteotomy (its applicability; accidents; how the best results are secured).

The West Virginia Medical Practice Act.—We are indebted to a correspondent for the text of Judge Green's opinion, to which we alluded last week, establishing the constitutionality of the act, and we find it an exceedingly satisfactory document. It is the impression of those who have followed the trial which has led to this decision that the opinion places the employment of a physician on higher ground than that of a lawyer, and plainly shows the necessity of statutes to regulate the practice of medicine and surgery. It is thought also that it will accomplish much good by encouraging higher medical education and pronouncing authoritatively against quackery and ignorance.

The Bridgeport Hospital and the Fairfield County, Conn., Medical Society.—On Tuesday the new hospital for the city of Bridgeport was inaugurated with appropriate ceremonies, which were blended with the proceedings of the semi-annual meeting of the medical society of the county in which Bridgeport is situated. The programme, which we have already given, was carried out to the satisfaction of those in attendance, including a number of medical men invited from New York and other places in the vicinity.

The Death of Dr. Augustus H. Abernethy, of Bridgeport, Conn., is announced as having taken place on Sunday, the 9th inst., in consequence of an attack of angina pectoris. Dr. Abernethy was a graduate of the medical department of Yale College, of the class of 1864.

The Death of Dr. Neumann, professor of psychiatry at Breslau, is recorded in our Continental exchanges. He died on the 10th of October, at the age of seventy-one.

The "Annals of Surgery," which may be looked upon as in some sort the successor of the "Annals of Anatomy and Surgery," is announced as about to appear simultaneously in this country and Great Britain, under the joint editorship of Dr. L. S. Pilcher, of Brooklyn, and Mr. C. B. Keetley, of London. The list of collaborators comprises the names of a number of distinguished men in both countries, and we look to see the "Annals" a most creditable publication. It is to be a monthly, and the first number will be dated January, 1885.

Female Internes in the Paris Hospitals.—"It appears," says the "Union médicale," a journal that has vigorously opposed the admission of women to the Paris hospitals, "that, in spite of the opposition formally expressed by the majority of the hospital physicians and surgeons, in spite of the steps taken by Professor Hardy, president of the Association of Internes, and by M. Moutard-Martin and M. Nicaise, medical delegates to the 'Conseil de surveillance de l'assistance publique,' a decree of the Prefect has just authorized the admission of female *externes* to the *concours* for the coming year. The "Union médicale" bewails this blindness of the Government as a return to the dark ages.

The Woman's Hospital.—We learn that Dr. P. F. Chambers has been appointed an assistant surgeon, in place of Dr. Charles S. Ward, resigned, and that Dr. Henry C. Coe has been appointed pathologist.

The New York Hospital.—Dr. J. S. Hawley has been appointed one of the physicians for diseases of women to the Out-patient Department, succeeding Dr. E. L. Partridge, resigned.

Recent Paris Theses.—By the same journal we learn that the following *thèses de doctorat* have lately been submitted:

November 27th.—On Kola (the *Sterculia acuminata*), by M. Monnet; On Syphilitic Gummata of the Larynx, by M. Latouphis. November 30th.—The Treatment of Cancer of the Cervix Uteri during Pregnancy, Parturition, and the Puerperium, by M. Barbulée; The Physiological and Therapeutical Properties of the *Piscidia erythrina*, by M. Legoy.

A False Accusation has been brought against Dr. J. Fossagrives by a number of English newspapers, together with one homeopathic medical journal, to the effect that, having witnessed the efficacy of homeopathy and the failure of legitimate medicine in a cholera epidemic, he has become a convert to the homeopathic doctrine. He vigorously repels the slander, in a letter to the editor of the "Gazette hebdomadaire de médecine et de chirurgie," stating that he has not seen a single case of cholera during the present outbreak, and that, if he had, he would have treated the disease as any one else of common sense would treat it.

A Modification of the Rag Importation Order has been made by the Secretary of the Treasury, limiting its operation to rags from infected ports and to old rags not properly certified by a United States consular agent to have been gathered, baled, and shipped at points free from infection.

The Gulstonian Lectures for 1885, according to the "Lancet," will be delivered by Professor William Osler, of Philadelphia.

The Glycerin Pad Pessary is the name of a new contrivance described and figured in a recent issue of the "Lancet." "Pessaries," says our contemporary, "inflated either with air, water, or padded with muc-mucin or other substances, after a short period invariably become useless, as air escapes, water evaporates, and padding becomes hard. This invention is intended to obviate these defects; the padded end is filled with glycerin, which *always remains soft* [mirabile dictu], and yet offers sufficient resistance to render the instrument effective."

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from November 2, 1884, to November 8, 1884:*

SPENCER, W. C., Major and Surgeon. Ordered to Fort Trumbull, Conn., for duty as post surgeon, relieving Assistant Surgeon William J. Wilson, U. S. A., who will report at Department Headquarters and await further orders. S. O. 227, Department of the East, November 5, 1884.

CORBUSIER, W. H., Captain and Assistant Surgeon. Ordered to Fort Grant, Arizona Territory, for duty as post surgeon. S. O. 102, Department of Arizona, October 30, 1884.

HOPKINS, WILLIAM E., First Lieutenant and Assistant Surgeon. Ordered to Fort Lowell, Arizona Territory, for duty as post surgeon. S. O. 102, Department of Arizona, October 30, 1884.

EGAN, PETER R., First Lieutenant and Assistant Surgeon. Relieved from duty at Fort Lowell, Arizona Territory, and ordered to Fort Bowie, Arizona Territory, for duty as post surgeon. S. O. 102, Department of Arizona, October 30, 1884.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending November 8, 1884:*

CRAIG, THOMAS C., Passed Assistant Surgeon. To the Alliance for temporary duty, November 1, 1884.

SWAN, ROBERT, Passed Assistant Surgeon. Detached from the Naval Hospital, Norfolk, Va., and placed on sick leave, November 3, 1884.

WIEBER, F. W. F. Appointed Assistant Surgeon, November 3, 1884.

Society Meetings for the Coming Week:

MONDAY, November 17th: New York County Medical Association; Hartford, Conn., City Medical Society.

TUESDAY, November 18th: New York State Medical Association (New York—First Day); New York Academy of Medicine (Section in Theory and Practice of Medicine); New York Obstetrical Society (private); Medical Society of the County of Kings, N. Y.; Medical Association of Central New York; Ogdensburg, N. Y., Medical Association.

WEDNESDAY, November 19th: New York State Medical Association (Second Day); Northwestern Medical and Surgical Society (private); Roman Medical Society (private); New Jersey Academy of Medicine (Newark); Suffolk District Medical Society, Boston (Section in Obstetrics and Diseases of Women).

THURSDAY, November 20th: New York Academy of Medicine; New York State Medical Association (Third Day); New Bedford, Mass., Society for Medical Improvement (private).

SATURDAY, November 22d: New York Medical and Surgical Society (private).

Proceedings of Societies.

NEW YORK ACADEMY OF MEDICINE.

Meeting of November 6, 1884.

The President, FORDYCE BARKER, M. D., LL. D., in the chair.

The Pathology of Sensory Aphasia.—Dr. R. W. AMIDON read a paper with this title, based upon original observations in one case, and upon a review of the history of twenty-three other cases reported by different authors. In his own case, the patient, a female, aged sixty-four years, married, had been in perfect health up to nine years ago. At that time she began to suffer from flatulent dyspepsia, headache, and other neurasthenic phenomena. Six weeks before Dr. Amidon first saw her, which was in June, 1883, she was seized with severe pain on the left side of the head, which continued three days, when she became flighty and excitable, and vomiting took place. The right pupil was larger than the left, the tongue deviated slightly to the right, the right hand was not as much stronger than the left as it should have been, and was somewhat tremulous. There was no weakness of the right lower extremity, nor any marked disturbance of motility. The fundus oculi was normal, and acuity of vision was apparently perfect. With regard to speech, it was only in answering questions that she spoke incorrectly; she gave inappropriate answers to interrogatories. She could not count or say letters, but when she spoke of her own accord her remarks were connected and intelligible. She knew all her friends except her husband, and she called her son her father. She could not read, and could not be induced to write. She could hear well, and could sing correctly. She was subject to periodic attacks of a spasmodic nature, occurring at intervals of about a month, characterized by a cry, a drawing up of the right hand, and drawing of the mouth to the right, followed by general convulsions, sometimes with involuntary evacuations.

February 16, 1884, she was seized with a convulsion at 7 P. M., which continued until 11 A. M., the 16th, when she became comatose and died. During the last twenty-four hours of her life she had passed very little urine.

At the autopsy the kidneys were found to be the seat of advanced interstitial changes. The right cerebral hemisphere was normal. On the left side there was an irregular depression, with destruction of the cortex by softening, involving the inferior parietal lobule, the angular gyrus, and the second occipital and first temporal convolutions. There were atheromatous changes in the vessels supplying these parts, one of them being entirely occluded.

Dr. Amidon then presented eight diagrams, and read the histories of cases reported by several observers.

Of the twenty-four cases, in eight, with lesions affecting both the visual and the auditory regions of the left hemisphere, there were word-blindness and word-deafness; in two, in which the area of vision alone was affected, there was word-blindness; in fourteen, with the lesion in the auditory region, there was word-deafness.

Dr. Amidon drew the following conclusions: Word-blindness was an incapacity to understand speech, written or printed, vision and intelligence being preserved. It was generally dependent upon a destructive lesion of parts of the left side of the brain.

The Asiatic Cholera as it appeared at Suspension Bridge, Niagara County, N. Y., in July, 1854, and its Lessons; What we know of the Cholera.—Dr. FRANK H. HAMILTON read a paper with this title. [See page 533.]

Dr. L. M. YALE said that his own experience with cholera had been confined to the epidemic on Blackwell's Island referred to by the author of the paper. The report which he then made combined also the experience of his associates upon the Island. He would give a few points in the history of this epidemic. It broke out in the workhouse. It had been preceded by a period of great heat and of prevalence of diarrhoeal troubles throughout the Island. It became necessary, therefore, to put remedies in various parts of the buildings so that the patients could get them without the trouble always of searching for a physician. The water-supply for a time was cut off, owing to some defect, and the bread had been sour for a short time. There had before been some sporadic cases in Charity Hospital. By the third day after the outbreak in the workhouse Dr. Yale had thirty-three cases, twenty-three of which proved fatal, and about twenty per cent. of the entire number of inmates were carried off before the disease was finally checked. The epidemic occurred principally on the lowest ground of the Island. More women contracted the disease than men, and this might be accounted for by the fact that the men went out to work by day and their wards were larger. The women remained in the wards, and the evacuations stood in a tub, in a room where the inmates often remained for a considerable time in conversation with one another. Again, the patients, being unwilling to go to the Cholera Hospital, tried to conceal the fact when they were seized with diarrhoea. These faulty conditions having been corrected, the cholera was rapidly and permanently stamped out. There was one circumstance which was not easily explainable, namely, that in one pavilion as many as thirty cases of cholera developed, whereas in another pavilion, not thirty feet distant, not a single case occurred, although the conditions, so far as could be observed, were no better than in the other.

Dr. FRANCIS DELAFIELD supposed we would all admit that cholera belonged among the infectious diseases—a class of diseases which did not develop unless the body was infected by a specific poison. No matter how bad the influences under which human beings lived, with regard to soil, food, and hygiene in general, they might develop many other diseases, but they would not develop cholera unless there was added to these other favoring conditions the specific poison that belonged to the disease. Whether that specific poison had always to be imported into new

regions to develop the cholera, or whether it was capable of originating in new regions, might be a subject of dispute, but experience seemed to show that its home was India, and that other regions did not suffer until the poison was imported from India. If it was admitted that the disease was due to a specific poison, the question came up as to what that poison was. Here we had had all varieties of theories, none of which had proved particularly satisfactory. The latest theory, to which attention had been called this evening, was that, in accordance with the prevalent doctrine of the times, most of the infectious diseases were due to the presence and growth of certain minute organisms. Fashions of this kind in science and in medicine sometimes proved good and sometimes proved bad, and whether a given fashion would prove the one or the other could be known only after the lapse of some period of time. Dr. Hamilton had stated very fairly the evidence for and against this view of the causation of cholera. He had not stated, however, what Dr. Delafield considered particularly important to be borne in mind, that there were only a very few men whose testimony was of any value in speaking of the presence or absence of germs in disease, and the reason was the very great difficulty attending the experiments. Dr. Hamilton had called attention to the bearing which the condition of the soil and hygiene had upon the development of cholera, and this might be briefly expressed in this way, that whatever conditions of air, of temperature, of soil, of food, and of general hygiene, would predispose to the development of diarrhoea would also predispose to the spread of cholera. In other words, wherever there was a predisposition to diarrhoea, and also the specific poison of cholera, cholera would develop in its worst form and to the widest extent. If all these predisposing conditions were absent, the cholera-germ might find its way to the place and not produce cholera at all. This seemed to bring us to the means by which we could prevent its spread. In the present state of civilized society quarantine measures seemed to prove useless if commercial relations were to be continued with other countries. What we should do was to seek to remove every condition predisposing to the development of the disease.

Dr. A. L. LOOMIS said that his personal experience with cholera had been limited to a few cases which he saw in this city in 1866-'67, and he had therefore felt, when requested to discuss the paper, that he was largely in the position of one who was simply a student of the literature of the subject. It seemed to him that, at the present time, we might justly divide the infectious diseases into three classes, in accordance with the nature of their specific cause. The specific cause in the one class produced its disease on being transmitted to the healthy person directly from one already infected. There was no evidence that the exanthematous diseases were transmitted in any other way than by direct or indirect exposure to the contagion. The second class was that in which the disease was due to exposure to a poison developed outside of the human body, as in decomposing organic matter. The third class was that in which the poison developed within the living organism, and was capable of reproducing the disease only after having undergone certain changes subsequent to its discharge or removal from the infected person. To this class belonged typhoid fever and, he believed, also cholera. The home of cholera seemed to be Bengal, and epidemics in other parts of the world could always be traced as having originated there. He did not believe that cholera was ever of spontaneous origin. He then gave instances which went to show that in every epidemic of the disease its origin could be traced to spread of the contagion through soiled clothing, infected water, etc. The view that the poison was active only after it had undergone certain changes on being removed from the human organism was favored by the fact that those

making autopsies, those attending the patients, and microscopical observers of the fresh discharges, seldom contracted the disease. He was of opinion that the poison entered the body only through the mucous membrane, but not necessarily by way of the mouth and stomach. Sufficiently strict quarantine regulations would prevent the spread of cholera, but the difficulty of enforcing them had already been mentioned. The efficacy of the treatment spoken of by the author of the paper had been of great interest to him.

Dr. JOHN C. PETEES showed maps illustrating the spread of cholera from its home in India, and, speaking of preventing an epidemic in this country by quarantine, he said that so long as Denmark enforced her quarantine relations she had escaped cholera, whereas, as soon as those restrictions, on one occasion, had been removed, the poison was imported, and she, with neighboring countries, lost many inhabitants. Quarantine had also proved efficacious in Greece.

PATHOLOGICAL SOCIETY OF PHILADELPHIA.

Meeting of September 11, 1884.

The President, Dr. JAMES TYSON, in the chair.

Cystic Papillary Adenoma of the Neck.—Dr. J. M. BAR-
TON presented a specimen which he had removed from a patient at his clinic at Jefferson Medical College on September 6th. The patient was a married woman, thirty-one years of age, the mother of three children. The tumor was of slow growth, having existed for five years, and having increased but little in the last two years. It gave rise to no pain and but little deformity. It was of about the size of a walnut and lay beneath the clavicular extremity of the left sterno-cleido-mastoid muscle in close proximity to both the subclavian and the carotid arteries, from which it received a decided pulsation; on strongly pressing the tumor upward and outward the pulsation ceased. The tumor was closely adherent to a number of large veins of new formation, which greatly increased the difficulties of its removal. On section, it presented a number of alveoli, of variable diameter, communicating with each other and lined with a thick membrane, similar in appearance to the inner coats of the arteries. This membrane seemed to have undergone calcareous degeneration in some portions. When the tumor was fresh these cysts, on incision, were filled with a dark-red fluid like disintegrated blood.

On the 9th of October the Committee on Morbid Growths reported in regard to this specimen that a section made from it showed a stroma of fibrous tissue, in which cavities were seen, varying in size, and lined with an epithelium having a cuboidal shape. From the margins of many of these cavities papillary ingrowths were noted, covered with cylindrical-shaped epithelium; others were filled with the remains of cells or a structureless, colloid substance. The tumor might, therefore, be considered a cystic papillary adenoma in which a colloid degeneration had occurred, or, from its location, it was not improbable that it might be either an outgrowth from the thyroid gland or a supernumerary gland.

NEW YORK SURGICAL SOCIETY.

Meeting of October 28, 1884.

The President, Dr. ROBERT F. WEIR, in the chair.

Deformity of the Hands from Cicatricial Contractions, following Extensive Burns.—Dr. A. C. POST presented a patient under treatment for complicated deformities of the hands from burns which were inflicted nearly two years ago. The patient was a young woman, who attempted by gaslight to wash with

benzin long kid gloves which were on her hands and forearms. The benzin took fire, and the forearms and hands were very severely burned. She came under Dr. Post's care within a few weeks after the injury, but it was a long time before the burns were sufficiently healed to enable him to take any active measures to correct the deformities which they had occasioned. Within the last year a series of operations had been performed chiefly to overcome the forced flexion of the fingers at the articulations between the first and second and second and third phalanges. And these operations had been attended by a gratifying measure of success. The last operation was performed nearly seven weeks ago. It was designed to overcome an exaggerated extension or backward flexion at the metacarpo-phalangeal articulations. It consisted in numerous oblique incisions across the back of the hands and fingers, extending through the whole thickness of the cicatricial tissue, and dividing it into small rhomboidal segments. The fingers were then forced into a bent position nearly at right angles, and held in that position by narrow splints of malleable iron, one for each finger, applied to the palmar surface of the finger, hand, and forearm, and held in place by strips of adhesive plaster and roller bandages. Before the splints were applied the wounds were washed with a solution of mercuric bichloride, and dusted with subnitrate of bismuth. The wounds were healed within twelve days from the time of the operation. The dressings had been repeated three times a week, passive motion being made freely at each dressing. For the last three weeks the splints had been left off for half a day before each dressing, and active and passive movements had been freely resorted to. The backward flexion of the phalanges had been entirely overcome, and the patient was regaining the use of the fingers. Dr. Post made the remark that in the division of cicatricial bands the wounds healed more rapidly, and with less irritation, when a large number of incisions were made than when the incisions were less numerous and with wider intervals between them.

Hyperplastic Follicular Goitre.—Dr. A. G. GERSTER presented a patient, a female, twenty-four years of age, a native of Bohemia, where goitre could not be said to be endemic, from whom twenty days ago he removed the right half of the thyroid gland. The patient said that she had had the goitre since her childhood, and also that about ten years ago she had some exophthalmus, and suffered somewhat from palpitation of the heart. About one year ago the goitre began to grow rapidly and was still growing, and extended upward and backward along the course of the sterno-cleido-mastoid muscle, its length in this direction measuring three inches and a half. She also began to suffer from dyspnoea, especially when going up stairs or walking rapidly, and desired the removal of the tumor. Puncture being performed, no liquid was found. Examination of the growth after its removal revealed that fluctuation was due to gelatinous deposits in the tumor.

It might be asked why he had not resorted to other methods of treatment before performing extirpation. The chief reason was that he felt at the lower portion of the tumor two distinct nodules, probably calcareous in character, and subsequent examination showed that the assumption was correct. The method of removal was by a flap incision, commencing at the middle of the anterior margin of the sterno-mastoid, carrying it around the circumference of the tumor and back to the lowest point of the border of the sterno-cleido-mastoid muscle. The capsule having been exposed, the enlarged body was dissected out in the usual manner by dividing such strands of tissue as had been grasped between the blades of forceps. From seventy to seventy-five ligatures were required in dissecting out the entire tumor, and not more than an ounce of blood was lost during the operation. The tumor was very closely adherent to

the anterior portion of the trachea and cricoid cartilage, and at that point dissection was most difficult. The wound was united by a number of deep sutures. The muscles which were cut were the sterno-hyoid and a large portion of the sterno-cleido-mastoid on the right side, which were united with catgut sutures, and finally the flap was attached with two continuous sutures, and an ample dressing, consisting of some iodoform gauze and a bag of sublimate sawdust, was placed over the wound. Union by first intention took place except at one point, where an absorbable drainage-tube had been introduced, and where a few granulations remained. The tumor exhibited represented the right lobe of the thyroid gland. The left lobe was normal, and was allowed to remain.

Dr. Gerster thought the flap operation preferable in these cases to the longitudinal incision, as it gave more room.

The Secretary, Dr. L. M. YALE, then read the thesis of a candidate for membership.

Spontaneous Fracture of both Femora.—Dr. L. A. STIMSON presented specimens from the case of a man, fifty-one years of age, who was admitted to Bellevue Hospital October 16, 1884, and died October 23d. He was a carpenter, and had always been robust and healthy until last winter, when he began to feel weak and to suffer from aching pains in both thighs. The pain continuing, he ceased to work, but did not take to his bed. His strength diminished, and he lost flesh. The day before admission, while walking across the room, he caught his toe in the oil-cloth, fell, and was unable to rise. On admission, each femur was found to be broken at about the junction of the upper and middle thirds. He healed rapidly, without fever or complaint of pain, became dull and semi-unconscious, and died on the eighth day. Examination of the urine showed a specific gravity of 1.004, but no albumin or casts. The autopsy revealed only a large stone in the pelvis of each kidney. These were shown, one weighing five ounces and six grains, the other one ounce and four hundred and thirty-two grains.

The portions of the femur presented were those adjoining the fractures. All four pieces showed an advanced stage of osteoporosis. The compact tissue and the wall of the shaft had almost entirely given place to frail, spongy tissue. Scales of bone fell off at the touch, and one of the fragments had almost crumbled to pieces by the slight handling it had received since its removal. The diameter of each bone was as great as usual, but the medullary canal was very large. Each canal was occupied by a dark blood-clot nearly two inches long. Examination of the other bones was not allowed. A fragment of bone that weighed twenty-nine centigrammes, after having been boiled and dried, was decalcified with nitric acid, and then weighed eleven centigrammes, which indicated that the percentage of inorganic matter in the specimen did not differ materially from the normal. The kidney showed dilated pelvis and calices, with marked atrophy of the cortical substance, and it was remarkable that with stones of that size there was no evidence of kidney disease either irritative or obstructive in character.

Foreign Body in the Urethra and Bladder.—Dr. STIMSON also presented an ordinary lead-pencil removed from the penis and bladder of an unmarried man, forty-six years of age. The pencil was seven and one sixteenth inches long, had been in place forty hours, and was removed through a perineal incision. The patient said he introduced it because he found himself unable to urinate; but there was nothing in his history or in the condition of the urethra to confirm the excuse.

Dr. Post had had occasion many years ago to remove, through a perineal incision, a short piece of lead-pencil from the neck of the bladder. The piece had been sharpened at one end, and the patient had taken the precaution to make it smooth by covering it with a little ball of sealing-wax.

Tumors of the Bladder; Cystotomy.—Dr. J. L. LITTLE presented a number of tumors which he had removed from the bladder of a patient in St. Luke's Hospital, who gave the following history, which was kindly furnished by Dr. Ludlow, of the house staff: "James McA., aged forty-nine, married, a card-driver by occupation, and a native of Ireland. His family history is good. About eight years ago he had a sudden hæmorrhage from the bladder while urinating. For two days previous he had frequent micturition and pain at the symphysis pubis. From this time up to one year ago the hæmorrhages recurred at intervals of three or four months, and lasted about as many days. During all this time micturition was not very frequent, and he continued at work. About one year ago the quantity of urine voided steadily diminished for about one week, and then stopped altogether, and it was necessary to resort to catheterization. Since this time he has constantly used the catheter, as he has been unable at any time to pass more than a small quantity of urine, and that with great pain. The desire to urinate has become more frequent. The patient was sent to Dr. Little's clinic at the post-graduate school, by Dr. W. B. Wallace, about two months ago.

"On examination, no calculus was found, and it was discovered that the introduction of a sound or a soft catheter was always followed by a fresh hæmorrhage into the bladder. He was able to hold his urine without pain for six or eight hours at a time. The symptoms indicating a growth in the bladder, he was sent to St. Luke's Hospital for an exploratory operation. A consultation was held and the operation advised. An examination of the urine showed pus, blood, mucus, and triple phosphates. No casts or shreds of tumor were found.

"On October 27th Dr. Little performed median cystotomy. On introducing the finger, a number of soft tumors could be detected. These were situated at the trigone of the bladder, between, and extending beyond, the orifices of the ureters. A number could also be felt attached to the upper surface of the bladder. The situation of these growths being distinctly made out by the finger, Thompson's tumor forceps was introduced, and the tumors were seized and twisted or bitten off from their attachments. It was found necessary to enlarge the opening in the bladder by a slight incision downward toward the prostate in order to introduce the forceps with facility. Twenty distinct masses, most of them seeming to be separate tumors, were removed. These varied from the size of a hazel-nut to that of a hickory-nut. They all seemed to be villous in character. A large number of small pieces, evidently torn off from the larger tumors, were also removed. The surface of the bladder, after the removal of these growths, was left considerably roughened. Two orifices, large enough to allow of the introduction of the tip of the finger, could be felt in the situation of the openings of the ureters. These seemed to be the dilated orifices of the ureters. The hæmorrhage during the operation was considerable, but not enough to be alarming at any time. After the operation was completed, the bladder was thoroughly washed out with hot boro-salicylic-acid solution. This seemed to greatly lessen the hæmorrhage. The wound was left open, no tube or catheter being used. During the evening following the operation the hæmorrhage was very free at times. Dr. Hance, the house surgeon, tried injecting a solution of tannic acid without effect; finally he succeeded in controlling the hæmorrhage by packing the rectum with ice, and applying ice-bags over the pubes.

"October 28th.—Patient's condition is good. Temperature 99° F., urine stained with blood."

Since the last notes in the history furnished by Dr. Ludlow, and read to the society, the patient had been steadily improv-

ing, passing nearly all his urine from the penis without pain, free from hemorrhage, and without recourse to a catheter. The microscopic examination of the tumor would be reported at the next meeting.

Rupture of the Bladder (Intra-peritoneal) with Fractured Pelvis; Laparotomy and Suture of the Bladder; Death.—Dr. W. T. BULL presented a specimen with this history:

A laborer, forty-six years of age, was brought to the Chambers Street Hospital October 27, 1884, at 12.27 P. M., having fallen from the first floor to the cellar through a heater-shaft, a distance of sixteen feet. He was unconscious on admission, respirations 31 and shallow, pulse 96, temperature 95°, surface cold. He presented evidences of the following injuries: Lacerated wounds of the right temple, fracture of the left radius (Colles's), and fracture of the right side of the pelvis, the exact location of which was not made out. Three hours later, while he was still unconscious, a catheter was passed into the bladder without difficulty, and one ounce and a half of bloody urine withdrawn. Temperature 97.5°, pulse 78, respiration 40. A No. 30 (F.) steel sound was passed readily. An hour later half an ounce of bloody urine was withdrawn by the catheter, and about the same amount for three successive hours. Stimulants and the hot-air bath were used, and the man gradually regained consciousness. He had been very restless, and complained of pain in the lower part of the abdomen, but evinced no desire to urinate. P. 120, weak; R. 44; T. 97.5°. There was dullness in both iliac regions, the hypogastrium, and half-way to the umbilicus. There was no pronounced swelling. On introducing a black rubber catheter as far as the bladder, one ounce of bloody urine was withdrawn, but two ounces with clots were expelled when the instrument was pushed to a depth of eleven inches from the eye of the catheter. With a silver catheter the point gave to the finger the impression of engaging in a mesh of soft tissue after it had been passed quite beyond the ostium urethrae internum. At midnight, twelve hours from the time of injury, P. 150, R. 44, T. 96°. An hour later the condition had changed but little—T. 97°, P. 140, R. 44. Dr. Bull saw the patient at this hour with Dr. F. W. Murray, and, feeling certain, from a consideration of the symptoms above enumerated, that a rupture of the bladder had occurred, either into the peritoneal cavity or into the subperitoneal tissue anterior to the bladder, decided to make an exploratory incision into the abdominal cavity. Ether was administered, Dr. Murray and the house surgeon, Dr. Mack, assisting. Before the incision was made, it was ascertained that the pelvis was fractured only through the body and descending ramus. After the subperitoneal connective tissue was opened, much blood, but no urine, was found to be extravasated in its meshes. On cutting through the peritoneum to the extent of three inches, several ounces of thin bloody fluid, apparently urine, escaped, and the small intestine floated into the wound and obscured both vision and touch. The presence of the intestines rendered further exploration so uncertain that he extended the abdominal incision to five inches, drew out all the coils of intestine that were accessible, and held them on the left side protected by towels wet with warm water. The bladder was now drawn upward and forward over the symphysis, and held with a hook. A rent was now plainly seen in its posterior wall, commencing just below the point of its peritoneal covering and extending an inch and three quarters backward. Its edges were slightly everted, displacing the mucous membrane, and a catheter, introduced *per urethram*, emerged through the rent. The wound in the bladder was then closed by seven carbolized-silk sutures introduced from below upward, and passed, like a Lambert's intestinal suture, through the peritoneal coat only. It was ascertained that the sutures were placed at intervals of one eighth to one quarter of an inch. The bloody fluid and a few clots were

then sponged out of the abdominal cavity, the intestines were replaced, and the incision in the parietes was closed with four silver-wire, six silk, and thirteen catgut sutures. A dressing of iodoform and absorbent cotton was applied, a small rubber drain being left at the lower angle of the wound. A soft rubber catheter was tied in the bladder. He chose this method of drainage of the organ in preference to a median cystotomy, because he thought it would be more efficient, while the care of a perineal wound would be likely to interfere with the quiet necessary for the proper management of the fractured pelvis. Again, the patient's condition did not permit continuing the operation longer than was necessary, and it seemed to him that the cystotomy could be done subsequently if the catheter did not drain the bladder satisfactorily. The operation lasted one hour, and during its performance tincture of digitalis and whisky were several times injected subcutaneously. At its close the pulse was 130, but of better volume and stronger than before; respirations 40, and shallow. One could truthfully say that, notwithstanding the operative attack and the etherization, which was conducted with great care, the man's condition was no worse than before it was begun. In spite of all efforts to improve his condition, the man died comatose seven hours after the operation, and at his death two ounces of clear urine passed through the catheter.

Only an incomplete autopsy was possible. Dr. Murray, who kindly examined the body, had reported to Dr. Bull that on opening the abdomen he found much extravasated blood in the subperitoneal tissue of both iliac and the right lumbar regions, the pelvis fractured through the body and descending ramus of the right side, and the fragments of the horizontal portion separated by an interval of one inch. The peritoneal cavity contained no urine; the intestines were healthy, but Douglas's *cul-de-sac* contained about one ounce of fluid blood. The urethra, rectum, and bladder were removed *en masse*, and presented no lesions except some submucous ecchymoses in the bladder, and the rent, closed by suture, in the posterior wall of the bladder. Before opening the organ, however, it was filled with water through a funnel introduced into the urethra. A little water escaped between the two lowest sutures. It was found that, while the other sutures had been introduced at pretty regular intervals of from one eighth to one quarter of an inch, these two sutures covered an extent of tissue equal to half an inch. The wound in the mucous membrane had about the same extent as those of the peritoneal coat, an inch and three quarters, and its edges were gaping inwardly. The bladder was completely empty and contracted. The kidneys were healthy. Other parts could not be examined.

Dr. Bull said that he had felt justified in giving the patient the chance of the operation in spite of his other injuries, feeling sure of the diagnosis, and knowing that his greatest danger was from the extravasated urine and blood being allowed to remain in the peritoneal cavity. He had been surprised at the fact that, after opening the peritoneal cavity, the intestines, though not distended, were so much in the way that he could gain no idea of the state of the bladder save that it was empty, and he believed that by putting them aside he had done no harm, and gained much in time and the facility of exploring the bladder-wound. It was not easy to introduce the deepest sutures. He had made every effort to close the wound carefully, but had failed, as the injection of the bladder on autopsy showed, to do so perfectly at its deepest part. At the same time, he thought that, as the adhesion of the peritoneal membrane took place so rapidly, occurring, as examinations after ovariectomy had shown, in from six to twelve hours, the wound would not have "leaked" had the patient lived. This seemed all the more likely as the drainage through the catheter was

perfect, two ounces having flowed away in the seven hours before death, and the bladder being found quite empty and contracted.

BROOKLYN PATHOLOGICAL SOCIETY.

(Concluded from page 526.)

Aneurysm of the Right Subclavian Artery involving the Innominate; Death.—Dr. PAUL H. KRETZSCHMAR related the case of a German farmer who came under his observation in September, 1881. He was at that time sixty-one years of age, and he had enjoyed perfect health until about nine months previous, when he commenced to experience shortness of breath while working on his farm. A troublesome cough and hoarseness induced him to obtain medical advice from a practitioner in his neighborhood, and, following the advice given, he sold his farm and came to Brooklyn to live a perfectly quiet life. When Dr. Kretzschmar first saw him he complained of increased dyspnea, of considerable cough with free expectoration of tough, whitish mucus, and of occasional hoarseness. He said that he had lost his former strength, and that he was unable to walk fast or go upstairs; he presented the picture of a prematurely old man.

A physical exploration of the chest revealed aortic and mitral murmurs with both sounds of the heart, and a diagnosis of valvular disease was made at that time. Notwithstanding proper medical and hygienic treatment, the symptoms increased in severity, the hoarseness lost its intermittent character and became permanent, and the patient commenced to complain of very severe pain on the right side of the neck, extending both up toward the right side of the face and down to the axilla. After two months the right radial pulse was weaker than the left, and the two were not synchronous. The area of cardiac dullness was not perceptibly enlarged, but there was a marked change in the character of the sounds at the aortic valves, and the murmurs, which at first could only be heard at the seat of the valves, could then be traced along the upper border of the clavicle. These symptoms, together with a well-defined area of dullness in the supraclavicular space, led him to change the diagnosis to aneurysm.

The very favorable results which he had obtained from the use of large doses of iodide of potassium in cases of aneurysm induced him to put the patient on the use of half-drachm doses of the drug every two hours, and to order perfect and absolute rest. This treatment was continued for about three months, and the patient showed marked signs of improvement. The severe pain, which previously had prevented sleep, disappeared entirely, and the troublesome hoarseness improved. In fact, he did so well that he lost sight of him for six or seven months. When he saw him again, during the latter part of 1882, the former unpleasant symptoms had recurred with increased severity, and a pulsating tumor could be felt at the upper border of the right clavicle. The patient declared positively that his stomach could not stand any more of the medicine which he had taken previously, and that he would not take it if it was prescribed. He was then put for ten days on the use of acetate of lead, in doses of two grains four times a day, and afterward he was given drachm-doses of Squibb's fluid extract of ergot four times daily, without the slightest sign of beneficial action. Tonics, cold compresses over the tumor, and anodynes were used according to symptomatic indications. One night in May, 1883, he was called suddenly to see the patient, and found him bolstered up in bed gasping for breath, the perspiration rolling down his cyanosed face, and his pulse feeble and irregular. Iodide of potassium, disguised, was ordered again, in forty-grain doses, every two hours, and the following day the man was much better. So long as the administration of the iodide was continued

the patient improved, but, when he refused to take any more of it, the disease became progressive and the size of the tumor increased. During the autumn of 1883 it became apparent that a large portion of the first rib on the right side had been absorbed by pressure, and after that time the tumor grew very rapidly. Shortly before death it had acquired its largest size, resembling the protruding occiput of an infant during delivery. The patient died May 17, 1884. The autopsy was made Dr. Hunt the following day, and the aneurysm, together with the large vessels and the heart, was removed. The President would kindly demonstrate the specimen.

The interesting points in the clinical history of this case were: 1. The fact that the diagnosis was made more than three years before the fatal termination took place. 2. The decided and beneficial influence which large doses of iodide of potassium had on the disease, especially the relief from the most severe pain, which was obtained repeatedly and almost instantaneously after the use of the drug. 3. The large size which the tumor acquired so rapidly after the first rib had been absorbed.

Pernicious Anæmia.—The President presented the stomach from a woman who had died in his service at St. Mary's Hospital, and in whose case there had been some question as to the diagnosis. She was a single woman, thirty-eight years old, a native of Ireland. She had been sick for about two years. The first symptoms noted were those of indigestion and anorexia. Vomiting soon appeared, occurring directly after eating, and the matter ejected consisted of undigested food. After these symptoms had continued about a year, she noticed a swelling of the feet and some puffiness of the face. The abdomen had never been swollen. About four months prior to her admission the vomit began to look dark-colored, and, still later, yellowish and frothy. She described it as having the appearance of frog's spawn. She was not aware of having vomited blood at any time. For some months there had been cough, with a thick, tenacious sputum. She was also troubled with constipation and headache.

On admission, her appearance was that of extreme anæmia, with a pretty-well-marked icterode hue. Though somewhat thin, she was not greatly emaciated; the tissues were soft, succulent, and flabby. The radial pulse and the apex-beat were feeble, and a moderately loud blowing sound was heard at the left of the sternum, in the second and third intercostal spaces. The area of cardiac dullness was somewhat extended. There were no physical signs of pulmonary disease other than those indicative of anæmia—viz., increased resonance and prolongation of the expiratory murmur. The hepatic dullness extended two or three inches below the costal cartilages, and the liver remained in contact with the anterior wall of the abdomen. The epigastric region was tender upon pressure, and she complained of a burning and stinging sensation extending upward, from this to the sternal region. The urine contained a slight quantity of albumin, but no casts were discovered. The patient was extremely weak, and the constant vomiting had reduced her to such a state of prostration that an ophthalmoscopic examination was not attempted. The diagnosis lay between chronic nephritis, carcinoma of the stomach and liver, and pernicious anæmia. Owing to the jaundice, epigastric pain and tenderness, extension of hepatic dullness (though without a nodular surface of the liver), and the fact that, on the second day after admission, the vomited matter contained blood, together with the total inability to retain anything upon the stomach, the probabilities were thought to be in favor of carcinoma. The albuminuria was attributed to the extreme anæmia and adynamia. The treatment consisted in the administration of the ordinary remedies for vomiting and anodynes. The bowels were moved by enemata. In spite of every effort, the emesis continued, and,

on the twelfth day after admission, she vomited a basinful of blood, after which she rapidly sank, and died within twenty-four hours. The autopsy was made by Dr. A. H. P. Leuf, pathologist to the hospital, and the following is his report:

Autopsy.—Body well nourished; skin yellow; rigor mortis very slight. The lungs were both extremely pale and emphysematous in the upper and anterior parts. The left apex only was slightly adherent. There were numerous slight pinkish subpleural ecchymoses over both lungs. The transverse, or left innominate, vein was cut in removing the heart. A stream of blood about 3 mm. in diameter spurted out for fully one minute, describing an arc of a circle having a radius of about 5 cm. The blood was almost perfectly clear, looking as if it had been diluted with water to such an extent that it formed but 25 per cent. of the bulk. No clotted blood was found anywhere. There was dilatation of the tricuspid and bicuspid orifices, especially of the latter, which admitted four fingers to the middle joint. The stomach and gut were normal. The liver was soft and slightly enlarged, projected down to the umbilicus, and was very yellow. It was bound to the diaphragm by old adhesions. The common bile-duct was distended and full of bile. The pancreas was normal. The spleen was normal in size, but very dark and firm. Both kidneys had distributed irregularly throughout their substance numerous small ecchymoses. Each was anæmic, but the right one less so than its fellow. The uterus was atrophied and imbedded in a fibroid fully 3 cm. in diameter. Another fibroid projected from the right upper angle of the main growth; and yet another, having a sessile attachment, was found projecting from the left lower aspect of the large growth. The last one mentioned was about 2 cm. in diameter and the other about 1.5 cm. Both ovaries were long, narrow, flat, and markedly senile.

The PRESIDENT stated that, in bringing the case before the society, he was conscious of the defects in its history, but presented it as one of great clinical interest, and for the purpose of obtaining the views of the members as to the propriety of classifying it under the head of pernicious anæmia.

Dr. KRETZSCHMAR, after having listened to Dr. Westbrook, still held the view he had formerly expressed to that gentleman, and that was that his case was not one of pernicious anæmia. As he took it, pernicious anæmia only occurred when no pathological lesion could be discovered at the autopsy. It was essentially a disease of the red-blood corpuscles. It was not an anæmia pure and simple. If the leucocytes of the blood should be increased it could not be called pernicious anæmia, but it was essential to the production of this disease that the normal quantity of red globules should be actually and considerably diminished. The marrow of the long bones had not been examined in this case. According to Biermer, a case could not be called one of pernicious anæmia that showed any anatomical lesion of the viscera. Because the examination in this case had been incomplete, and on account of the lesions found post mortem, he declined to consider it a case of pernicious anæmia.

Dr. SAMUEL G. ARMOR said it could be stated as a general principle that those were all cases of pernicious anæmia in which the anæmia was intense without any discoverable local cause, and without any revelations of a pathological nature after death. He quite agreed with Dr. Kretzschmar. All those anæmias associated with pathological changes were secondary. This was a general principle. All others formed the group of idiopathic or essential anæmias. He believed that the cause of the anæmia in Dr. Westbrook's case was really in the stomach. He also thought that a large proportion of the cases reported to be cases of pernicious anæmia were really due to gastric changes. He would call attention to Dr. Flint's writings upon the subject, who maintained that many cases, like the one before us,

together with cases of Addison's disease, had their cause in the stomach. He still believed the anæmia in Dr. Westbrook's case to have been the result of a diseased stomach.

The PRESIDENT thought the question was one of nomenclature. Dr. Kretzschmar was right in saying that, according to Biermer, with whom the term "progressive pernicious anæmia" originated, this was not a case of that disease; nevertheless, there was a difference of opinion among clinicians as to what the term should mean. Quincke, for instance, included under the head "pernicious anæmia" many instances of profound anæmia in connection with obvious disease of the viscera. Dr. Flint, as Dr. Armor had observed, had long ago prophesied that the lesion in these cases would be found in the digestive apparatus, probably in some degeneration or other morbid process in the stomach. There had recently appeared, in Virchow's "Archiv," an account of some researches by Sasaki, in which he had found changes in the nervous plexuses of Auerbach and Meissner; fibroid and hyaline changes in connection with the microscopic ganglia of these local nervous mechanisms, which were connected—the one with the muscular, the other with the mucous layer of the intestinal walls. In this case, the only discoverable lesion, beyond a fatty degeneration of the liver, was in the mucous membrane of the stomach. It was evident that the condition of the liver could not, by itself, account for the history of the case. To what extent the changes in the stomach could be held responsible could only be determined on the report of the Microscopical Committee.

Dr. ARMOR asked if there had not been some new light thrown upon Addison's disease. He had the impression that some one had pretty well determined that it was always associated with changes in the abdominal sympathetic ganglia.

Dr. FERGUSON replied that the President's German authority included Addison's disease among the pernicious anæmias, and that he had examined the sympathetic plexuses of the gut, kidneys, and supra-renal capsules, but he thought with not very positive results.

An Acardiac-acephalous Monster.—Dr. W. J. BRANDT reported that, on the 21st of August, he was called to see Mrs. G., and found that she had had a miscarriage at about the third or fourth month. It was a case of twin conception, and one fetus was wanting in arms and head. The placenta was shut up in the uterus so firmly, and the vagina was so small, that he was unable to remove the former; so he gave a full dose of ergot, and the next morning the placenta was found in the vagina.

After reading a passage from Ziegler's "Pathology," descriptive of such monsters, and of the mode of their formation, Dr. Brandt said that dissection of this specimen showed the framework of the thorax to be fairly developed, the sternum and ribs being present, but there were no contents. The abdomen contained only a very primitive intestine, but there were well-developed kidneys. No other viscera were present. On opening the vertebral canal, the spinal cord was well shown, extending to the lower end of the spine, and not stopping in the lumbar region. The subcutaneous tissue of the upper end of the specimen was infiltrated with a mucus-like substance. The feet were both deformed, one being in the condition of talipes calcaneus and the other in that of talipes equino-varus. On one foot there were two toes only, and on the other three. Both fetuses were males.

AMERICAN PUBLIC HEALTH ASSOCIATION.

(Concluded from page 531.)

Thursday's Proceedings.

The Sanitary Care of Cattle in Transportation.—At the morning session Dr. W. B. CONNERY, of Missouri, read a paper

on this subject, with special reference to the splenic fever of Texas cattle. Under the best of circumstances, the journey made by the vast herds of cattle from the ranches of the West to the great midland and eastern cities was attended with almost insuperable hardships, owing to the great distance traveled, and the want of food, drink, and space. It was not uncommon for cattle to be shipped from St. Louis to New York with only one break in the journey. The cars should not be overloaded, and they should be thoroughly cleansed and disinfected after each shipment. There should be an abundance of fresh air provided, and the animals should have plenty of good water and have access to salt-pans. They should be inspected daily, and those that were in bad condition should be removed from contact with the others.

A Proposed Health Exposition at New Orleans, in connection with the World's Exposition to be held in that city, was the subject of a preamble and resolutions introduced by Dr. S. S. HERRICK, of New Orleans, in behalf of the Hon. John Eaton, U. S. Commissioner of Education. They were referred to the Committee on Resolutions.

Dr. COVERTON, of Toronto, invited the association to hold its next meeting in that city.

Reports of Committees were read as follows: Of the Committee on Cattle Diseases, by Dr. J. M. PARTRIDGE, of Indiana; and of the Committee on Epidemics, by Dr. A. N. BELL, of New York. Dr. JOSEPH HOLT, of Louisiana, read a separate report on "Quarantine Sanitation," in which he opposed the system by detention, and described the plan pursued in New Orleans.

The Sanitation of the Mississippi Valley was the title of a paper by Dr. G. B. THORNTON, of Tennessee. The Mississippi River bottom, he said, lying between the 37th and 29th parallels, or between Cairo and New Orleans, a territory of 32,000 square miles, was one of the richest sections in the world. It contained alluvial bottoms, was subject to annual overflows, and many places, once under cultivation, must necessarily be abandoned and thus revert to their wild state. This country was the true habitat of malarial diseases of all kinds. There was a marked difference in susceptibility to these diseases between whites and negroes, the former being far more susceptible than the latter and not standing exposure so well during summer and autumn. This section had been visited by yellow fever and cholera on several occasions. The sanitation of the valley depended upon the following measures: 1. The reduction of the causes of malarious atmosphere to the minimum. 2. Improvement in the present method of living. 3. The prevention of the introduction of the infectious diseases above mentioned. The swamp lands were enormous, but the intensity of the disease seemed to vary with different years, owing to a difference of atmospheric conditions. Overflows did not inevitably cause an increase of malarial or other disease, and they did not usually either cause or promote epidemics, therefore they were not commonly dreaded. There was no adequate index to the condition of the bottom countries so far as health was concerned. Malarial diseases prevailed most largely in the latter part of summer and autumn, when the ground was covered with dew and the air was moist. The conditions necessary for the production of malaria were a heat of from 67° to 70° F., permanent moisture, and vegetable decomposition or emanations. The first essential step in prophylaxis was to reduce to the minimum the two elements which were to some degree controllable—moisture and vegetable decomposition, or the miasmatic emanations of the soil. The seasons being immutable, the heat could not be modified. Civil and sanitary engineering could so dispose of the water distributed over this country by the excessive spring floods and annual rainfall as in a measure to control this element. This

would require an effective system of levees, canals, and reservoirs. The third factor, decayed vegetable matter and the deleterious elements of a fresh soil, was in course of removal by the constant clearing and cultivation of lands for agricultural purposes. The work of building levees, draining bayous, lakes, and stagnant pools, and removing the deleterious ferments of the soil by cultivation was a slow process toward the sanitation of this vast delta. In the mean time it would be well to consider the best methods for the preservation of health in the face of these opposing elements. The resistance to malaria could be increased by improved methods of living, especially among those not acclimated; good food, wholesome drinking-water, suitable clothing, keeping out of the night air, strict abstinence from whiskey, and comfortable houses would greatly facilitate the struggle with the disease. Individual hygiene was a necessity, but the class who observed it was very limited, and it might be said that there were fewer people in this section of the valley who enjoyed the comforts of home life than in any other section of the Union. Those suffering most were Northern, often European, laborers working under contract. They had to live in miserable huts, with poor food and clothing, were usually sallow, had enlarged livers and spleens, and suffered from what they called swamp fever. Now that Congress had spent five millions to deepen the mouth of the Mississippi, and had appropriated money for the construction of levees to prevent overflows, the question had become one of more than local interest. Protection from overflows in the Northern States had become a matter of vital interest to the people of the North and the South. This section was the agricultural center of the country, and contributed more to its wealth than any other. It seemed to be agreed that levees were the best protection against overflows. Reservoirs at the head of the tributaries of the Ohio, the straightening of channels by cut-offs, the closing of bayous and crevasses, and the formation of levees, were the most practicable means of prevention.

The Present and Future of Water Analysis was the title of a paper by Dr. CHARLES SMART, of the army.

The Pollution of the Upper Ohio, and the Water Supply of its Cities and Towns.—Dr. JAMES E. REEVES, of West Virginia, read a paper with this title, in which he said that the health and probable length of life of a people might be measured by the quality and quantity of its water supply. In view of the refuse of all kinds that was thrown into the upper Ohio, it should not be a matter of surprise that the death rate from typhoid fever and diarrhoeal diseases was high in the region in which its waters were used. But it was not ordinary filth, as such, that was the source of danger, but certain specific germs that were apt to accompany it.

The Relation of the Depth of Water in Wells to the Causation of Typhoid Fever.—Dr. HENRY B. BAKER, of Michigan, read a paper in which he showed a relation between a low level of the well-water and a high mortality from typhoid fever in Michigan. This was to be explained by the greater ease with which refuse matter percolating through the soil ran into the wells under such circumstances. Typhoid fever could be prevented by avoiding contaminated water, but the prevention of the contamination of the well-water was by no means an easy matter.

The True Value of Chemical Analysis in determining the Hygienic Purity of Potable Water was the subject of an interesting paper by Dr. T. M. STEVENS, of Indiana.

Prize Essays.—Mr. HENRY LAMB, of Rochester, N. Y., offered to give the association \$2,000 to be contended for next year by those contributing papers, the subjects being divided as follows:

First, "Healthy Homes and Food for the Working Classes,"

\$500. *Second*, "On the Sanitary Conditions and Necessities of School-houses and School Life," \$500. *Third*, "On Disinfectants and Individual Prophylaxis against Infectious Diseases," \$500. *Fourth*, "An Appliance and Means for Saving Life, and for Protection against Injurious Influences of some Work and Occupations on Health," \$500. Essays to be ready April 5th, and to become the property of the association. Mr. Lamb also agreed to give \$50 to defray the expenses of a committee on disinfectants. A committee, to consist of five members, one to be named by the National Board of Health, three by the Executive Committee of the Public Health Association, and one by the President of the Conference of State Boards of Health, was asked to be appointed for the examination of essays and awarding of prizes.

The donation was accepted by a rising vote and the matter referred to the Committee on Resolutions.

Other papers were read as follows: "The Manufacture of Soda-Water from Polluted Well-Water," by Dr. FRANK R. FREY, of St. Louis; "The Relation between Underground Sewerage and Filth Diseases," by Dr. S. S. HERRICK, of Louisiana; and "The Chemical Disposition of Sewage," by Dr. W. J. HAREIS, of St. Louis.

The Germ Theory of Disease was the title of a paper by Dr. G. M. STERNBERG, of the army, who gave a summary of the work of Koch, Pasteur, and several other investigators, as well as of some of his own researches. He had not been able to find the microbe of yellow fever, and he doubted if it was to be found in the blood; perhaps it would be found in the intestinal discharges. The paper was exceedingly well illustrated with views projected on a screen, displaying a great variety of the lower organisms.

The Bearing of the Discovery of the Tubercle Bacillus on the Public Health.—Dr. L. BREMER, of St. Louis, read a paper with this title, in which he said that there were some people who denied that Koch's discovery marked a progress in practical medicine, because it had added nothing to the treatment of consumption. This must be admitted. Phthisis was today as it had been before the demonstration of the tubercle bacillus. But there was one point gained that would prove of incalculable importance—the aetiology of the disease being known, we could, in a measure, protect ourselves from tuberculous infection. Care ought to be taken to prevent the sputa of consumptives from becoming dry and pulverized. It was dangerous to sleep in the same bed with a consumptive. Double beds ought to be discarded on general hygienic principles. People ought to be made aware of the existence of the disease. It did not benefit a patient or a patient's family to conceal the truth, especially since the dissecting-table had revealed the fact that many patients recovered from phthisis. A well-founded hope of ultimate recovery might therefore be held out to patients. Carpets in a sick room were dangerous under all circumstances, but especially were they so in cases of zymotic disease, above all in consumption. In hotels and buildings of a public character carpets ought to be abolished, because it was impossible to control their cleanliness and freedom from tubercular material. Raw beef should never be eaten, and milk should not be used in its raw state. Aside from certain diseases known to create a predisposition to consumption—measles and whooping-cough for instance—insufficient and unwholesome food, overcrowding, debauches, and want of ventilation and breathing space were all close allies of the disease. We could not prevent marriages between consumptives, although such marriages were in a sense immoral. Moral suasion and scientific conviction were equally ineffectual. It was a fact, as common as it was deplorable, that those were most eager to propagate their species who were least fitted for life and least likely to give rise to a healthy and vigor-

ous progeny. Again, there were the many depressing factors of our civilization, intimately connected and interwoven with our social, commercial, and industrial life, which all tended to pave the way for the invasion of the disease germ. To remove those factors would be to radically change our modern civilization—to realize the dreams of the most enthusiastic reformers—in short, it would be the establishment of the millennium. But much could be done to check and limit the disease by the means and precautions he had indicated.

Friday's Proceedings.

Officers for the Ensuing Year were elected as follows: Dr. JAMES E. REEVES, of West Virginia, President; the Hon. ERASTUS BROOKS, of New York, and Dr. HENRY B. BAKER, of Michigan, Vice-Presidents; Dr. J. B. LINDSEY, of Tennessee, Treasurer; and Dr. H. P. WALCOTT, of Massachusetts, Dr. CHARLES SMART, of the army, Dr. GEORGE B. THORNTON, of Tennessee, Dr. D. W. HAND, of Minnesota, Dr. GUSTAVE DEVRON, of Louisiana, and Dr. H. B. HOLBECK, of South Carolina, members of the Executive Committee. It was voted to hold the next meeting in Washington, in December, 1885.

Papers were read as follows: "On the Importance of Thorough and Complete Isolation in Scarlet-Fever Cases," by Dr. W. WINNEDGE, of Indiana; "The Administration of the Food and Drugs Adulteration Laws of Massachusetts," by Dr. B. F. DAVENPORT, of that State; "The Sources and Quality of the Meat and Milk Supplies of St. Louis," by Dr. SPIEGELHALTER, of that city, together with another on the same subject by Mr. J. C. CABANNE; "On Street Paving," by Mr. J. W. TURNER (by title); and "On the Climatic Conditions of St. Louis," by Professor F. E. NIPHER. A number of other papers were then read by title.

On motion of Dr. LISTON H. MONTGOMERY, of Chicago, a vote of thanks was passed to the President, Dr. Albert L. Gihon, for the able and impartial manner in which he had presided; and the meeting adjourned.

Miscellany.

THERAPEUTICAL NOTES.

Piscidia Erythrina.—According to the "Deutsche Medicinal-Zeitung," Fronmüller has made observations with this drug, using both the solid extract and the fluid extract, the former in doses of from two to four grains at bedtime, and the latter in doses of from seventy-five to two hundred drops. Sleeplessness was regarded as the indication for its administration. Ninety-three patients were thus treated, with most satisfactory results. The remedy is described as milder in its action than opium, as not constipating, and as having no influence upon the pulse, the temperature, or the secretions. In many of the cases sleep ensued after a half-hour, and was uninterrupted throughout the night. The patients awoke without a trace of heaviness or headache.

Paraldehyde.—Berger ("Breslauer ärztliche Zeitschrift") gives a short notice of this preparation, which he contrasts, as regards safety and efficiency, with chloral hydrate, much to the advantage of the former. The dose varies from three to six grammes, although one gramme has been mentioned as the proper limit. In order to disguise the extremely unpleasant odor and taste of the drug, the following combination is suggested:

Paraldehyde, gum arabic, each	18 parts.
Make an emulsion with distilled water	150 "
Add syrup of almonds	30 "

Dose, a tablespoonful, to be repeated in half an hour if necessary.

Pyrogallic Acid in the Treatment of Lupus.—Schwimmer ("Wiener med. Wochenschrift") states that mercury and pyrogallic acid exercise "a complementary and reciprocal action" when used at the same time in the treatment of this affection. The acid is applied in the form of an ointment (1 to 10), the inunctions being continued for eight days, and then suspended for two weeks, during which time mercurial plaster is applied. In general, the cure should be complete after two series of such inunctions. The duration of the treatment is usually from three to four months.

Papayotin.—According to the "Deutsche Medizinal-Zeitung," this comparatively new vegetable ferment acts as a digestive in either an acid, an alkaline, or a neutral liquid, and it is suggested as a valuable preparation for use in rectal alimentation. By reason of its solvent power, it has been employed as a local application in diphtheria. Diphtheritic membranes are rapidly dissolved by it, and the reporter (Finkle) expresses the greatest confidence in the drug for this purpose. The only efficient preparations have been imported from South America.

Pure Cannabine.—Bombelm ("Pharmaceutische Zeitung") describes the process of isolating the pure alkaloid by adding oxide of zinc to the tannate. The product is a dry, brownish-green powder, which is dispelled without residue by heating on platinum foil. Doses of from 0.05 to 0.1 gramme produce sleep without any preceding excitement. The pure alkaloid is tasteless, insoluble in water, but readily soluble in alcohol, ether, or chloroform. It may be administered in the form of powder, pills, or emulsion. When used in suppositories, all of its effects are obtained without the constipation produced by opium.

Lemon-Juice in the Treatment of Diphtheria.—Dr. Gartoyksi, of California, writes to the "Lancet" that he has long been accustomed to use fresh lemon-juice as the only remedy in the severest cases of diphtheria, a practice which he learned from the Chinese. The juice is drunk either in the form of lemonade or in the clear state. No statistics are given, but the author speaks highly of the benefit derived from this simple treatment.

Alcoholic Injections in Uterine Hæmorrhage.—Dr. Hapgood ("British Medical Journal") reports a severe case of uterine hæmorrhage where the only remedy at hand was a bottle of whisky. He promptly soaked a napkin in the whisky, and introduced it into the uterine cavity, with the result of stopping the hæmorrhage. Encouraged by his success, he states, he has now used injections of alcohol in several similar cases, and with such good results that he recommends this treatment to the consideration of the profession.

Sigmund's Mercurial Plaster.—The "Union médicale" gives the following formula:

Mercurial plaster,
Soap plaster, each, 30 grammes.

Mix at a moderate temperature and spread on fine cloth, not starched. This plaster is applied to syphilitic swellings, papules, vegetations, excoriations, and indurated testicles. It can be made into bougies or suppositories, which may be introduced into the urethra or the rectum in cases of syphilitic lesions.

Catarrh of the Bladder.—The same journal gives the following formula, used by Zeissl in the internal treatment of catarrh of the bladder:

Powdered leaves of *Herniaria glabra*,
Chenopodium, each, 5 grammes.

Mix and divide into five parts. Add one part to a litre of boiling water. The infusion may be made more agreeable by the addition of milk.

Collyria for Conjunctivitis.—The same journal gives also the following formula:

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|----------------------------|-----------------|
| (1.) Sulphate of zinc..... | 0.20 gramme; |
| Extract of opium..... | 0.10 " |
| Rose water..... | 30.00 grammes. |
| (2.) Sulphate of zinc..... | 1.00 gramme; |
| Powdered camphor..... | 0.50 " |
| Distilled water..... | 100.00 grammes. |

Stir until it dissolves, heating if necessary, and then filter.
These collyria are recommended in the catarrhal form of conjuncti-

vitis. They should be dropped into the eye three or four times a day, after the conjunctiva has been thoroughly cleansed.

The Inoculation of the Cholera Bacillus.—The "Wiener medicinische Wochenschrift" has a report from Berlin to the effect that Koch has succeeded in inoculating animals with the cholera bacillus, and in producing cholera in the rabbit; and, moreover, that Finkler and Prior's doctrine concerning the identity of the comma bacillus and the bacillus of cholera nostras has been found to be incorrect. Commenting on this statement, the "Gazette hebdomadaire de médecine et de chirurgie" adds the following: "Political journals inform us that Professor M. von Pettenkofer has declared publicly his readiness to ingest (*absorber*) Koch's bacillus cultures, and has expressed the hope that a large number of his colleagues will follow his example. We confess that we find it difficult to understand how a man of his position can lend himself to such romantic experiments."

The most Reliable and Sensitive Tests for Albumin.—An exhaustive paper on this subject, by Dr. H. B. Millard, in the "Medical Record" of May 31, 1884, founded on the results of numerous and extensive experiments with urine, artificially prepared peptones, dried serum and egg albumin, alkaloïds, etc., gives the following conclusions with reference to the tests for albumin: The author discards both Roberts's brine test and picric acid, the chief objections to picric acid being that, although it is a delicate test for albumin, like the brine test, it is objectionable from producing a precipitate with the parapeptones and all protein compounds. It is stated that these may be recognized by their clearing up on the application of a low degree of heat.

Dr. Millard, however, has not found this to be the case, either in peptonuria or in experiments with artificially prepared peptones. Picric acid also precipitates mucin, which may be known by its forming filaments upon the application of heat; that it forms precipitates with quinine and the oleo-resins is unimportant, as these disappear by heat or on the addition of alcohol. He has repeatedly found the brine test, used by Heller's method, to show a clear white line like that produced by nitric acid, where the existence of albumin could not be shown by any unmistakable tests. Nor does it offer any advantages over certain other absolutely positive and accurate tests described. The most reliable and delicate tests he believes to be in the order of their sensitiveness, *heat*, *nitric acid*, the *tungstate of sodium*, the *double iodide of mercury and potassium* (Tanret's test), and the *phenic-acetic acid* test, the last two, perhaps, being about equal in delicacy. *Heat* he considers the least sensitive of these, though Dr. Roberts professes to be able to detect 1 part in 250,000 of water. The urine should be clarified before using this test by filtration or boiling with liquor potassæ, and should be rendered faintly acid by adding acetic acid before applying heat. Dr. Millard used the heat test with serum albumin chemically prepared and with albuminous urine, but did not find it to show the presence of albumin in the slight proportion stated by Roberts. Nevertheless, if care is taken not to acidulate the specimen too much, heat is in many cases, perhaps in most, a good test. The author's experience, however, has been to the effect that it could be dispensed with in favor of the other four above mentioned.

The precipitate produced by *nitric acid* is not likely to be mistaken for anything but the urates, and these are easy of recognition. The test is not so sensitive, however, as the three following. It is valuable, however, because albuminuria so slight in degree as not to be shown by nitric acid is frequently, *ceteris paribus*, of but little practical importance, because there should be no difficulty in distinguishing the reaction produced by it from that produced by other substances, and finally because the thickness of the line or layer produced by Heller's method with it gives, according to Hofmann and Uitzmann's calculations, a very fair idea of the percentage of albumin.

The *tungstate of sodium* is entitled to high commendation. It is not caustic and does not stain, it is cheap and easily prepared, and is a more sensitive test than either of the preceding. Artificial peptones are precipitated by it but very slightly; it does not precipitate the parapeptones, and it gives no reaction with quinine. There seem to be no objections as regards its accuracy and freedom from reaction with other substances than albumin.

[It is employed in the same manner as Heller's test with nitric acid

—that is, by letting the urine trickle down upon a convenient quantity of the reagent placed in the bottom of a test-tube. It is prepared by mixing together equal parts of the saturated solutions of the tungstate (one part in four) and of citric acid (ten in six) and water. Thus prepared, however, it crystallizes or becomes turbid when cold. When this occurs, filtration should be employed, and the reagent will afterward remain clear.]

The double iodide of mercury and potassium, known as Tanret's test, is an exceedingly sensitive and satisfactory test.

The correct formula is:

Potassii iodidi.....	3.32 grm.
Hydrargyri bichloridi.....	1.35 grm.
Acidi acetici.....	20 c. c.
Aque dest. q. s. ad.....	100 c. c.

It may easily be prepared as follows:

"The 3.32 grm. of the iodide of potassium are placed in the bottom of a glass and a slight quantity more of distilled water than is necessary to dissolve the salt poured upon it; then in a second glass is placed 1.35 grm. of the bichloride of mercury, and a few drops of water are poured upon it, so as to produce a pasty consistence; then there is poured upon this gently down the side of the glass the contents of the first glass, taking care to agitate it constantly; the biniodide of mercury is immediately found manifested by an intense red. This mixture is stirred and distilled water added drop by drop till the redness has completely disappeared; the slightly yellowish liquid thus obtained is poured into 80 c. c. of distilled water, 20 c. c. of acetic acid are added, and the mixture is filtered. A liquid is thus obtained which is very transparent, almost colorless, and which can be preserved for a long time" (Capitan).

This test, used experimentally with diluted albuminous urine, dried egg- and blood-albumin, artificial peptones, and various alkaloids, is shown to be extremely sensitive and certain in detecting the presence of all protein substances. According to Capitan, 0.0035 c. c. of albumin to 1,000 grm. or one litre (about $\frac{1}{2}$ grain to a litre, or 1 part to more than 300,000) may be detected by it when all other reagents have ceased to show it. Of course, to detect the presence of such minute quantities of albumin, great care must be taken. It may be employed by placing the urine in the test-tube and letting the reagent trickle down upon it along the side of the tube by means of a pipette, when a cloudiness will result. On warming, this will remain uniform or resolve itself into flakes, according to the amount of albumin present. The best method, however, is to place the reagent first, and let the urine, which should be cleared if turbid, run slowly down the test-tube upon it. The two liquids thus remain separated, and at the point of contact a bluish disc is seen, more or less thick. The specific gravity of the reagent thus prepared is about 1.027. It is a good plan to mark the specific gravity of this and the tungstate on the labels, as where the urine is very heavy it will take its place at the bottom of the tube. It is important to recognize that other substances produce a reaction with this test resembling that produced by albumin; these are the urates in excess, peptones, quinine, and atropine—these are all readily soluble by heat and alcohol. The precipitate or cloud produced by morphine and strychnine with this reagent is not soluble by heat and alcohol when strong solutions are artificially prepared, but is soluble by heat in weak solutions, and would easily disappear in the minute quantities that would be likely to be found in the urine. All these precipitates, when dissolved by heat, reappear when the urine or solution containing them becomes cold. Mucin is also coagulated by this reagent, but, upon the application of heat, resolves itself into fine filaments. The existence of mucus is also easily recognizable with the microscope. Properly used, this test would appear free from error, and is certainly sensitive and simple.

The phenic and acetic acid and potash test is a modification by Dr. Millard of Méhu's test of phenic and acetic acid and alcohol. We give the author's own words:

"The proportions of the test as I have modified it are:

Acid. phenic. glacial. (96 per cent.).....	3 ij;
Acid. acet. puri.....	3 vij;
M. Acid. liquor. potasse.....	5 ij. 3 vj.

"It is important that the glacial carbolic acid should be used, or the mixture, which should be quite clear, will be turbid. Thus prepared, I find the test a perfectly satisfactory one. Where the two acids are used without the potash, I presume that an acid albumin is formed, which is prevented by the addition of the potash.

"This test appears to me, from my own experience, to be as sensitive as Tanret's, and perhaps more so, and, like it, produces no reaction with other substances than albumin that can not be easily accounted for. In a number of instances where Roberts's muriated brine test and picric acid showed parapetones manifested by disappearing by heat after Tanret's test, this showed no reaction.

"It forms a precipitate with artificially prepared peptones and with strong solutions of quinine, both easily soluble by heat and alcohol. With strychnine it presents no reaction except in strong solution, when it produces a slight cloud, and this readily disappears by heat. With strong solutions of atropine and morphine it produces a reaction, the precipitate being soluble by heat when diluted. These alkaloids would not occur in the urine in sufficient quantity to produce a reaction. I have produced slight opacity or turbidity in urine with this test, in which albumin had been shown by all the other tests I have mentioned, but, when the urine was greatly diluted, all except this one failed to give a reaction. Like Tanret's test, when albumin is present in minute quantities, as 0.005 grm. or 0.0035 grm. to the litre, it does not form a disc, but produces a loss of clearness, the opacity being of a slightly yellowish or greenish tinge, the cloudiness produced by Tanret's test being slightly opalescent."

Méhu's test has this insuperable objection, that, when the precipitate or cloud is subjected to heat to determine if it is albumin or peptone, it disappears. With the test as modified by Dr. Millard, however, the parapetones disappear by heat, but the albumin is unaffected by it.

"To sum up, then," the author continues, "I believe that in the double iodide of mercury and potassium, the tungstate of sodium, and phenic-acetic acid test, we have three reagents which combine the desiderata of extreme sensitiveness, accuracy, and simplicity. The phenic-acetic test has the advantage over Tanret's that it shows no reaction with quinine, and, if I adhere somewhat preferably in my examinations principally to the latter, it is because it has served me so well; it is perhaps good enough, but it is of importance to know that the phenic-acetic test seems equally good.

"As to heat and nitric acid, I use them sometimes; they are less delicate than the others, and I believe the former could be dispensed with entirely, as it is sometimes troublesome with acid-albumin or alkali-albumin. The nitric acid has the advantage of showing approximately the percentage of albumin, and its indications are positive.

"I can not see, if I am correct in my observations, that there should be the embarrassment that is alleged to exist in the selection of reagents for the detection of albumin with care and certainty."

Mosquitoes and Yellow Fever.—"The following propositions," says the "Lancet," "which give in a condensed form the chief conclusions of Dr. Carlos Finlay's work on yellow fever, deserve consideration. Ordinary yellow fever is inoculable by means of the bite of the mosquito (*Culex mosquito*) on the third, fourth, fifth, and sixth days of its natural evolution. The disease can not be transmitted by the agency of the insect before the third day or after the sixth, no matter what the severity of the disease. The period of incubation of this experimental inoculation varies as widely as that of natural yellow fever. The duration and severity of the fever produced by inoculation by the mosquito appeared to be proportional to the number of the bites, and presumably to the quantity of matter contained in the insect's fang. The inoculation with one or two bites of the insect has never been followed by phenomena other than those usually met with in benign yellow fever. The results obtained up to the present lend hope to the suggestion that the inoculation by means of one or two *piques* of the mosquito may confer immunity from the severe forms of the disease to those who have to dwell in its midst. The inoculability of the disease by the agency above indicated points to the value of guarding patients suffering from yellow fever against the bites of mosquitoes in order to prevent the spread of the malady."

Lectures and Addresses.

AN ADDRESS IN

OBSTETRICS AND GYNÆCOLOGY,

DELIVERED AT THE FIRST ANNUAL MEETING OF THE NEW
YORK STATE MEDICAL ASSOCIATION,
NOVEMBER 19, 1884.

By T. GAILLARD THOMAS, M. D.,

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MR. PRESIDENT AND GENTLEMEN—FELLOWS OF THE NEW YORK STATE MEDICAL ASSOCIATION: If I interpret aright your wishes in requesting from me an address on obstetrics and gynæcology on the occasion which brings you together in this city to-day, you desire, at the hands of one who has paid more attention to these subjects than the general reader and practitioner, an estimate from his standpoint of the present status of these departments of medicine, their relations to other branches, the advances which the past decade has accomplished for them, and the most signal lines of progress which have been pursued in the accomplishment of such advancement. If my conception of your wishes is correct, my task will not prove a difficult one, nor shall I be forced to weary you with prolix and uninteresting details.

Pardon a passing reference to the infancy of the science of obstetrics, which will serve merely to remind you of facts which you know as well as I do. Obstetrics as an art must always have existed, even among savage nations, and, as civilization and refinement have increased, this art has ever become more and more perfect, keeping pace, as other arts have done, with the general advance in a people's knowledge. And thus it is that obstetrics, advancing from the ages of the past, from the period of the wonderful old man of Cos to that of Smellie and Levret, existed as a very perfect art indeed. But it was in no wise a science. He who was to elevate it to this high sphere was found in the person of the great Englishman, William Hunter, whose admirable work upon the gravid uterus did for this department of medicine what the eminent labors of Euclid did for mathematics, and which exists to-day as a valuable part of the library of every intelligent practitioner of midwifery.

From that time to the present a steady advance has been made, and in our day we see the reproach which once upon a time, and that not so very long ago, attached to the "man-midwife" entirely wiped away.

But all this has often been written of; let me leap over the wide chasm which divides two centuries from each other and speak of those improvements in this hundred-year-old science to which the past decade has given birth.

With how little pomp and parade are the greatest discoveries of science usually heralded! Who could have pictured to himself the wonderful results which were to follow the crude experiments of Count Rumford with steam; the watching of the swaying of a set of church lamps by Galileo; Newton's study under the apple-tree; or the flying of a Yankee printer's kite upon Boston Common? Yet the world has trembled and swayed under the results of these

things, and mankind has felt their influence in every fiber and atom! In my judgment, one of the greatest achievements of modern pathology has been the discovery of the agency of certain lowly organized monads, micrococci, and microzymes, classed under the head of bacteria, in the production of septicæmia, pyæmia, and the long list of diseases which are their outcome. These atomic bodies, floating in the atmosphere, clinging to sponges and towels, and adhering to instruments and fingers, enter the blood through the open mouths of abraded surfaces. The prevention of the evil consequences of such entrance by the plans of Lister has accomplished a great deal for general surgery. Applied to obstetrics and gynæcological surgery, the same methods are found to be fully as successful.

Progressive obstetricians are now pretty well agreed that the diseases which follow child-birth are due, for the most part, to the introduction of some contagium or poisonous element from without through the open mouths of exposed blood-vessels, laid bare by the parturient process, somewhere between the fundus uteri and the vulva. This theory once being accepted, it follows as a natural deduction that every means in the power of the obstetrician should be adopted for the prevention of the introduction of the morbid agents.

Even although the obstetricians of to-day are not prepared to make aseptic midwifery a rule wherever that art is practiced, it is highly probable that in the very near future this position will be accepted. Even now this method, in modified form, is exerting a beneficial influence and steadily working its way to adoption in spite of the fact that it entails a good deal of trouble on the practitioner. That it can do no harm is quite evident. Does any man, can any conscientious obstetrician, maintain that strict cleanliness and the most scrupulous avoidance, so far as it lies in his power, of all things which can possibly admit of the entrance of the agents which in all probability produce puerperal septicæmia will do any harm in the lying-in chamber? Supposing that only one life is saved out of a hundred deliveries, will any one assert that the saving of this one life would not repay him for the trouble which his preventive precautions have cost him? If the whole theory of the bacterial origin of puerperal fever is false, then in a quarter of a century from now all precautionary measures will disappear and the old *régime* will triumph. But if, perchance, this theory is valid and true, then no human power will prevent the realization of the prophecy that aseptic midwifery will be a rule as strict, as inviolable, and as obligatory as the aseptic surgery of amputations and of laparotomy is to-day. Look at the surgery of London, of Paris, of Vienna, and of New York of twenty years ago, with its unclean hands, its fatally dirty instruments, its death-laden sponges, and its foul air, with its terrible mortality, and then look at the surgery of those same cities to-day; and he will be a bold man who dares gainsay the statement that in another quarter of a century no one will venture to rise in a scientific body and declare that any efforts at perfect cleanliness in the lying-in room are superfluous or absurd.

To free the parturient act from the dangers of septic

poisoning, to prevent that scourge, the so-called puerperal fever, suppurative arthritis, pyæmia, embolism, and septic inflammation of the lungs, liver, and other organs, would be to save millions of lives in every generation, and to raise the science of obstetrics to an enviable height.

The germ theory has done more for obstetric medicine than what I have here alluded to. It has revolutionized the treatment of that variety of septiciæmia which has been called puerperal fever. No longer do we depend in the treatment of this affection upon quinine, opium, and the application of emollients over the abdomen. By intra-uterine injections the cavity of the uterus is thoroughly and repeatedly washed out with solutions of the bichloride of mercury 1 to 2,000, or with a 2½-per-cent. solution of carbolic acid. Surely no one who has experience in the new and the old methods will cavil at my statement that a great improvement has been effected by the former.

Were I called upon to sum up the treatment of a *declared undoubted* case of puerperal septiciæmia, marked by the usual symptoms of pulse of 120, temperature 105° or 106°, which would meet the requirements of our time, I should give it categorically thus:

1. Quiet all pain by morphine hypodermically.
2. Wash out the uterine cavity with antiseptics.
3. Lower the temperature at once below a hundred, not by the barbarous method of the cold bath, but by the far better one of the coil of running water.
4. Feed the patient upon milk and nothing else, unless some good reason exists for changing it.
5. Exclude from her room all except the nurse and doctor, keeping her as quiet as possible.

Although the subject of extra-uterine pregnancy has attracted attention from the earliest days of medicine, it is only of late years that it has been carefully studied, its diagnosis put upon a firm basis, and its treatment systematized. Laparotomy, with its wonderfully beneficent results, has been brought to bear upon these cases before and even after rupture of the vicarious fetal nest. By this procedure Jessup, of England, has succeeded in delivering at full term a child developed in the peritoneal cavity and saving at the same time the mother; and by it Tait, of the same country, has saved four women after the fetal sac has ruptured. But it is to the feticide powers of the electric current, first used by Allen, of Philadelphia, and then by Landis and Reeve, that the safety of such cases can best be trusted. This method is harmless to the mother, even if an incorrect diagnosis be made, and effectual in producing fetal death if the diagnosis be correct. The number of lives which have already been thus saved is quite large, and is daily increasing. And these are lives which in former times would have been sacrificed to inattention, or want of power in diagnosis, or a lack of reliable remedial measures, even if diagnosis were rendered pretty certain.

It must not be supposed that in the olden time no cases of extra-uterine pregnancy were saved. In making my statement I allude only to the systematic management of cases in their early periods, both as to diagnosis and treatment. In this country, even as early as 1759, Dr. John Bard successfully performed gastrotomy for the removal of

a full-grown child from the peritoneal cavity. Dr. Baynham did so twice—once in 1791 and again in 1799; and Dr. John King, of Edisto Island, South Carolina, in 1816, cut through the vagina at full term, applied the forceps through the opening, and safely delivered a slave woman of a child which was developed in an abdominal pregnancy. But at that time and long afterward—until our own times, I may say—the early diagnosis and early treatment of tubal pregnancy were found to be impossible. To-day, given a woman whose symptoms of pregnancy are irregular, who suffers pain in one iliac fossa, who has sudden gushes of blood, and who is subject to occasional attacks of faintness, and every intelligent practitioner would at once examine with reference to the existence of ectopic gestation, and, discovering it, would promptly proceed to destroy the fœtus in its false uterus.

Some one has very pithily said of late that the medicine of a hundred years hence will consist chiefly of prophylaxis and surgery. It appears to me that the statement, which has more than one grain of truth in it, applies with great force to our subject of to-day. The day is, I feel sure, not far distant when preventive measures will be applied with a most triumphant result to placenta prævia, puerperal nephritis, placental apnœa, contracted pelvis, the obstinate, and often fatal, vomiting of pregnancy, and that extreme hydræmia which so often results in thrombosis.

Obstetricians are beginning to question themselves as to whether it is wiser, in the interests of both child and mother, to wait and watch during the last two months of pregnancy until a sudden and furious hæmorrhage makes an issue unavoidable in placenta prævia, a convulsion announces the point of tolerance in puerperal uræmia, or the cessation of foetal movement tells the tale that the crippled intra-uterine lung has ceased to have power enough to prolong foetal life. The methods of inducing premature labor are now so simple, so certain, and so void of danger that they, more than at any previous time, present themselves as a sovereign resource in such cases.

And this is more especially true since Tarnier, by his glass-house with heated air regulated so as to meet the feeble heat-making process of the premature infant, renders the perpetuation of the lives of these beings so much more certain than when they were exposed to the chilling draughts of the chamber, and perhaps were at once dipped in water and exhausted by washing and dressing.

How often has every man in this room watched with intense interest and anxiety the following picture! A mother of several children, a beloved wife, and the center of a large circle dependent upon her for love, for care, and for counsel, about the end of the seventh month develops the symptoms of placenta prævia, or severe puerperal nephritis. The physician can not conceal from those who surround her the fact that a violent hæmorrhage or sudden convulsive seizure may at any moment destroy life. Should one of these occurrences take place, the patient's friends know full well that it may be hours before medical aid can be obtained in their dire necessity. Day after day the painful process of watching, hoping, dosing goes on; and gradually the symptoms grow worse until the final issue comes

and great joy is felt if, the child being sacrificed, the mother survives. It is to save all this, at the expense only of exposing the child to the danger of premature birth—a child, too, whose life would be at great hazard even if the pregnancy were allowed to proceed—that premature labor offers itself as a valuable resource.

The obstetric forceps is probably the most life-saving instrument which surgery has ever invented; and from the time of the Chamberlens, about 1647, thousands in every generation have endeavored to improve it, thousands have handed down their names in connection with it by suggesting trivial modifications, and thousands have in their efforts rendered themselves butts for the laughter of their successors by reason of the vanity which guided them. Few, very few, real improvements have been made in these instruments, and these improvements have occurred at long intervals. The Chamberlens used short, straight forceps; Levret and Smellie added length and gave a pelvic curve to these, and nearly, if not quite, doubled their value; and Tarnier, of France, has, in our day, added a pair of tractors which enable the operator to pull more accurately in coincidence with the superior strait, while the handles are still in the inferior. This is the only real improvement in these instruments since the days of Levret and Smellie, and, like theirs, it marks an era in the history of the instrument, and a mile-stone in its advancing usefulness. There are cases, many cases, in which it is not called for; there are some, and not a few, in which it gives great facility in delivery.

Of late two substitutes have been proposed for the Cæsarean section—extirpation of the gravid uterus and its annexa after delivery of the child from it, or Porro's operation; and delivery of the child above the superior strait of the pelvis by cutting through the abdominal walls and vagina, or laparo-elytrotomy.

R. P. Harris, of Philadelphia, the only great medical statistician that America has yet produced, reports, in October, 1883, that the combined Porro and Müller operations saved, out of 116 cases, 48 $\frac{2}{3}$ per cent. of mothers, and 90 out of 118 children. Garrigues, in an able and exhaustive essay, reports in the same year that, out of eight operations, laparo-elytrotomy saved half of the mothers and all of the children except two, who died before the operation was undertaken.

In general terms, I think that, to state the comparative success of the two operations, it must be said that the results of laparo-elytrotomy have thus far been superior to those of the Porro-Müller operation, but that for some inexplicable reason the latter has found favor with the profession, both in this country and in Europe, which the former has failed to obtain.

From my experience with laparo-elytrotomy, I feel certain that, if a fair trial is given to it, it will surely yield a success greater than either the Cæsarean section or the Porro-Müller operation. It is so easy of performance, inflicts so little injury upon important viscera, and has already proved so successful, that I can not doubt its merits.

We must not conclude that, because the general professional mind is not favorable to an operation which has been little tried, such an operation has "been weighed in the

balance and found wanting." The following examples will prove the contrary: In 1834, Gossett, of London, discovered the present operation for vesico-vaginal fistula—position, metal suture, speculum, and all—operated twice, and published his operations. Yet it was left for Marion Sims, in 1852, to rediscover the whole matter. The greatest advance which has been made in medicine during the present century is the application of clinical thermometry, and its adoption is, as you all know, quite recent. Yet, about one hundred years ago, Currie, of England, fully developed this invaluable contribution to scientific medicine merely to see it pass out of notice and yield no results. And these are by no means the only instances of want of appreciation which can be quoted. I do not, therefore, despair of laparo-elytrotomy, but, from my personal knowledge of its advantages, am very hopeful of its future.

A little over a month ago Dr. Pilcher, of Brooklyn, having under his charge a case of labor in a deformed woman, aged twenty-one years, in good health, but with a rachitic pelvis, giving in its antero-posterior diameter of the superior strait a measurement of two inches, sent for Dr. Skene to aid him. After she had been in labor eight hours, Dr. Skene, with his well-known skill, performed laparo-elytrotomy and delivered her of a living child. To-day both mother and child are perfectly well, the after-history of the former being entirely uneventful, the wound healing by first intention, and the patient sitting up on the twenty-first day. It gives me great pleasure to avail myself of Dr. Pilcher's kind permission to report this, as yet unpublished, case to you to-day. And now in all candor let me ask you if a procedure which has effected such a result repeatedly, both as regards mother and child, should not be at least fairly tried before it is cast aside among the failures of obstetric surgery.

From the earliest records of the medicine of Egypt, of Greece, and of Rome, the practice of gynæcology can be readily traced, and although, like all other learning, it became paralyzed by the baneful influence of the dark ages, it was upon the revival of letters at once pursued. Before the middle of the present century, however, it did not in any respect deserve the name of a science. About that time, through two influences—the speculum, which since the days of Récamier had slowly worked its way into use, and anæsthesia, which enabled the surgeon to perform operations, both tedious and painful, upon the genital organs—the science of gynæcology passed in great degree out of the domain of medicine, with its uncertain theories and doubtful resources, into that of surgery. And from that day a new era has existed for this department of medicine which has given it a place among others, not only of respectability, but of dignity.

I know not what view others may take as to the influence which has had so great a result upon gynæcology as all have seen exerted during the past quarter of a century, but, in my judgment, it is the bringing into the service of the department the powerful aid of surgery. Let me beg you to observe that I am not urging the claims of surgery at the expense of those of constitutional treatment in gynæcology. Far from doing this, I am a strong advocate for

the great advantage of constitutional treatment in diseases of the pelvic viscera of the female. There is no more clashing between medicine and surgery here than there is elsewhere; they should work together for good, the one sustaining and supplementing the other. Nevertheless, I fearlessly assume the position that an enlightened, conservative surgery is the pivot around which is to revolve the gynæcology of the future, and that, were surgery withdrawn from this department to-day, it would be emasculated of the greatest part of its usefulness and efficiency, and would gradually lapse into the condition which it occupied a century ago.

Every virtue has a vice which so closely corresponds to it, and so nearly resembles it upon superficial examination, that the real and the false are often confounded. Vanity often simulates modesty; cold policy passes current for charity; even arrogant pride is not rarely mistaken for humility. In medicine, cant, for there is cant in medicine as there is in religion, in politics, and in all other spheres in which the mind of man works, is often mistaken for that most laudable and meritorious of medical qualities, conservatism.

When vaccination was introduced, a great deal of medical cant was talked; and so when the pains of labor were first assuaged by chloroform; when ovarian tumors were submitted to laparotomy and thousands of valuable lives were yearly saved; and so, also, when the obstetric forceps was put upon its proper basis as an instrument to be resorted to in the interest of mother and child, before the symptoms of powerless labor had absolutely developed themselves. When, through the instrumentality of Simpson, Sims, and Simon, surgery was introduced into gynæcology, a jeremiad was inaugurated, the echoes of which are only now dying away like the grumblings of a recent storm. Those who practiced gynæcological surgery were accused of recklessly mutilating the most beautiful of God's creation. Their conservatism was impeached, their judgment was impugned, their honesty was attacked. And what has been the outcome of the controversy, what is the present status of the moot question? By the aid of gynæcological surgery thousands of women, who formerly filled beds of suffering throughout their menstrual lives, are now in a month or two restored to perfect health; thousands who were doomed to early death are saved; thousands who for weary years visited the offices of one, and then another, and still another physician, resisting the powers of general tonics, and nitrate of silver, and potassa fusa, and the actual cautery, are now quickly enabled to perform all the duties of life without exhausting their resources by yearly stipends to the medical man. A woman suffers from profuse leucorrhœa, and backache, and difficult locomotion. Formerly she would have gone, times without number, to her doctor's office to have caustics applied to the ulcer of the neck of the womb, until he got tired of her or she of him. Now a lacerated cervix is cured by Emmet's great operation, and a limit is put to her patience and her husband's capacity to bear expense. A young woman, whose terrible sufferings at menstrual periods have half crazed her, made her nearly an opium-eater or gin-drinker, and almost transformed her

into one of those social vampires who suck the sympathies and vital force of a whole family in place of blood, instead of living on, a libel upon her sex, is cured by Battey's operation and restored to her place in life. Another, who has had the accident of lacerated perineum inflicted upon her by parturition, instead of passing her life in "ringing the changes" upon all the varieties of pessaries known to art, is cured by perineorrhaphy or colporrhaphy. And still another, who, perchance, for twelve years has had an issue of blood and who has suffered many things of many physicians, and has spent all that she had and was nothing bettered, but rather grown worse, after having exhausted all the hæmostatics and oxytocics and astringents, has a loop of wire, called a curette, carried into the uterine cavity, and fifteen or twenty fungoid growths, about as large as grains of barley, removed, and straightway the fountain of her blood is dried up.

Surely the time is at hand when the gynæcological surgeon may boldly say to his detractors, "Enough of this, the logic of events condemns your futile efforts"; and to those in his own department, "He who is not prepared to give his patients the advantages of surgery, either at his own hands or those of another, is not prepared to act honestly and fairly by those who intrust their interests to his keeping."

The pathological conditions which most frequently result in that chain of symptoms which mark the pelvic diseases of women may, I think, be fairly tabulated in the following manner:

1. Injuries received during parturition.
2. Natural or acquired imperfections of the uterus and ovaries.
3. Displacements of the uterus.
4. Benign neoplasms in the uterus, ovaries, or annexa.
5. Tubal and ovarian diseases.
6. Uterine catarrh.
7. Hyperplastic development of the endometrium.
8. Neuroses, such as vaginismus.
9. Inflammatory disease of the pelvic areolar tissue and peritoneum.
10. Malignant disease of the uterus or ovaries.

It may safely be said that in almost all of these a resort to surgical interference is often an essential to cure, while in most of them it is absolutely so.

No surgical procedure has more profoundly excited the interest of gynæcologists during the last decade, and I may add that none has done more good, than the operation of trachelorrhaphy. That its future sphere of usefulness is a large and brilliant one no one who has studied its results without prejudice at the bedside can for a moment doubt. May its originator long live to enjoy the evidence of the good which his labors have accomplished, and will continue for all time to effect.

Extirpation of the ovaries for three purposes—1, for effecting a premature menopause; 2, for checking the growth of large fibroids; and 3, for removal of ovaries and Fallopian tubes for hydro- and pyo-salpinx, and resulting pelvic inflammation—has now become a well-recognized and accepted resource in gynæcology. The originators of

these operations, for they really differ from each other in many essential respects, are Battey, Hegar, and Tait. So great are the benefits resulting from these procedures in the various conditions for which they are practiced that nothing can now stop their advance.

Nevertheless, as I look to-day into the future of any operation for removal of the ovaries, I see it the instrument of great abuse; I see it performed in numerous cases of mental disorder aggravated by the menstrual molimen in which it will fail of result; in many of uterine disease which could without its aid have been cured by care, patience, and skill; and in a great many cases in which diagnosis is obscure, and in which a resort to it is, to say the least, empirical. But I see opening before it, in the future, also a wide, very wide, field of usefulness; I see cases of women, doomed not only to misery themselves, but dooming whole families to life-long discomfort and anxiety, entirely relieved by it; and I see many instances in which without it the curses of opium-eating and dipsomania, which frequently ingraft themselves upon the monthly recurring dysmenorrhœa, lifted by it from moral death to lives of happiness. Are we to reject agents capable of great good because by misdirection they are likewise capable of great evil? No; let us hail the good and apply it to man's wants, and let us strive as best we may to limit and control the evil which we can not wholly avoid. No one can doubt that numberless evils have attended upon the discovery of gunpowder, yet no one can be blind to the fact that that discovery has done a vast deal for the advancement of civilization and the best good of mankind.

Even as early as the year 1560 Andreas à Cruce is said to have removed the uterus *per vaginam* for carcinoma uteri, and it is probable that even before his time Soranus had performed this desperate operation, which taxes in our day the skill, boldness, and resources of the surgeon. During the eighteenth century the operation was several times performed, and in 1813 Langenbeck had a successful case. In 1829 Récamier made improvements in it, and in 1878 Czerny revived the operation and placed it upon a firm basis. In 1883 Länger published the following statistics of the procedure:

Vaginal extirpation of cancerous uterus.....	133
Recoveries.....	95
Deaths.....	38
The percentage of deaths being.....	28

In 1884 P. F. Mundé published statistics of 256 cases, with a mortality of $24\frac{1}{2}\%$ per cent.

Freund, in 1878, revived the operation of the removal of the uterus by abdominal section, a procedure put in practice by Gutberlat as early as 1825. Freund's operation has now been performed 106 times, with a result of 72 deaths and 34 recoveries.

Not to detain you longer upon the present status of these two heroic procedures for desperate conditions, I would sum up the matter by the statement that Freund's operation, by reason of the great difficulties and dangers which attend its accomplishment, is now relegated to disuse; while vaginal extirpation of the uterus, although acknowledged to be a procedure of great danger, of undoubted

difficulties, and of questionable results, has conquered for itself the position of a recognized, legitimate, and even valuable, procedure.

An operation which ends fatally in one quarter of all the cases submitted to it is a procedure of questionable character, of course; but let him who feels disposed to question the justice of the estimate here given remember the terrible future which inevitably attends upon the progress of uterine cancer; the physical suffering, the mental distress, the disgusting concomitant circumstances, and he must admit that any operation which has the power, even at the imminent risk of death, to lessen or remove these, should be hailed as a precious resource!

Uterine extirpation for cancer, however, is one of the most difficult and dangerous of the resources of surgery. As a compromise measure, removal of the entire neck by a conical section extending even up to the fundus uteri, and subsequent closure of the cervical lips by suture, often supersedes it with great advantage.

Deformities of the uterus which alter its shape, impair its nutrition, and interfere with the perviousness of its canal, have long been recognized as grave pathological factors; and even in our day the most sanguine practitioner must admit that their treatment is difficult, uncertain, attended by the dangers of cellulitis and peritonitis, and unsatisfactory to a lamentable degree.

At the present day there are three methods by which uterine deformities—antelexion, retroflexion, and lateroflexion—are treated: First, the misshapen organ is repeatedly forced into better form by the introduction of the uterine sound, and subsequently it is in a lame, uncertain fashion sustained by a vaginal pessary; second, the tortuous cervical canal is cut at the internal and external os, and a uterine stem is introduced and kept in place by a sustaining vaginal cup; and, third, the whole uterine canal is at one sitting distended by a powerful "divulsor," or expanding forceps, to as great an extent as the tissue of the organ will bear. The first two of these methods are well known to you; it is the latter that I would now bring to your notice.

The heroic nature of this operation, its apparent brutality, and the dangers which one would naturally fear as a consequence of the forcible stretching of uterine tissue, which is really equivalent to absolute tearing of it, has retarded its advance to the position of an accepted operation. Its introducers and chief indorsers have been Priestley, Borek, Ball, and Ellinger, all of whom have claimed for it not only excellent results in cases of uterine deformity, but also a very marked immunity from the accidents which one would fear from it. In this city Dr. W. Gill Wylie has reported very favorably of it; and Professor Goodell, of Philadelphia, has recently published a paper upon it which, with the strong indorsement of his name, will go far toward rendering it popular, and exciting others to a fairer trial of it than it has yet received. Personally I have no experience of it worth reporting, but I certainly feel it a duty to test the question of its use fully from the evidence which we now have before us.

In connection with my subject I would mention four drugs which have of late been introduced into practice, all

of which appear to me to possess sufficient value to warrant their special mention here. These are the permanganate of potash, and the fluid extracts of the stigmata and ustilago maidis, of the *Viscum album*, of the *Viburnum opulus* and *Viburnum prunifolium*.

Permanganate of potash, introduced by Sydney Ringer, of London, as an excitant of the menstrual flow, is, I think, the best emmenagogue which has yet been discovered. The stigmata and ustilago maidis, or ergot of corn, are, like the fluid extract of *Viscum album*, or mistletoe, excellent oxytocic agents, and replace the ordinary *Secale cornutum* very well, not only during labor, but in causing uterine contraction for the relief of metrorrhagia, uterine fibroids, subinvolution, etc.

The medicinal virtues of the *Viburnum opulus* and *Viburnum prunifolium* appear to consist in an influence of sedative character upon the utero-ovarian nerves. These drugs have been greatly lauded as preventives of threatened abortion, and remedies for the pains which attend disordered menstruation. Although in my experience they have fallen far short of the excellence which has been claimed for them, I feel sure that they possess a considerable degree of virtue.

Although the prolific theme which you have allotted to me, Fellows of the Association, would readily afford me material for a much longer address, the fear of taxing your patience admonishes me of the propriety of bringing my remarks to a close. In doing so, let me beg of you to accept my thanks for the kind attention which you have accorded me—an attention which has given zest to my efforts and rendered my task a pleasure instead of a labor.

Original Communications.

REMARKS ON THE DIETETIC TREATMENT OF DYSPESIA.*

BY AUSTIN FLINT, M. D., LL. D.

THE term dyspepsia is often used in a sense nearly or quite synonymous with the term indigestion. These two terms are defined in Dunglison's dictionary as equivalent. The French dictionary by Littré and Robin and the recent "Dictionnaire usuel" give to each term a distinct definition. In the "Real Encyclopædie," commenced in 1880 and completed in 1883, indigestion is not treated of as separate from dyspepsia, the former being considered as embraced in the latter.

The name dyspepsia, from its derivation, denotes an affection not necessarily involving indigestion. The name signifies difficulty of digestion. Now, digestion may be difficult, and attended by more or less suffering and disturbance of the nervous system, the digestive function, nevertheless, being duly and completely performed. Clinical observation shows that dyspepsia, in this sense of the term, occurs without indigestion, the latter term embracing the

various forms of disordered digestion. Cases are of frequent occurrence in which symptoms arising from difficult, or, as we may say, labored digestion, are unattended by symptoms that denote any perversion or incompleteness of the digestive function. It may be said, and justly, that dyspepsia is often associated with indigestion, and that the latter can hardly exist without the former; but the point which I wish to make at the outset of this paper is, that the term dyspepsia denotes an affection distinct from, and irrespective of, indigestion, the latter term being considered as denoting an affection characterized by such symptoms as nausea, vomiting, flatulence, acidity, and diarrhoea—symptoms which show the digestive function to be either perverted or incomplete. By late German writers the affection which it suffices to call dyspepsia is designated nervous or neurasthenic dyspepsia.*

In this brief paper I must be content with an enumeration of some of the symptoms which belong to the clinical history of dyspepsia. The local symptoms referable to the stomach are a sense of weight or of oppression in the region of the stomach after the ingestion of food. The abnormal sensations are sometimes of an indefinite, distressing character. There may or may not be tenderness on pressure in this region. Absolute pain is sometimes felt. These local symptoms are much diminished, and they may disappear when the stomach is free from ingesta. The appetite may be more or less impaired, but it is often not diminished, and not infrequently it is increased. Patients complain in some cases of what is vulgarly known as a sensation of "gone-ness."

The symptoms, aside from those which are local, as regards the stomach, relate especially to the nervous system. Patients are depressed, irritable, and hypochondriacal. There is lack of buoyancy, energy, and of both physical and intellectual endurance. Vertigo is a not infrequent symptom. Neuralgic pains in the head and elsewhere are common. Sleep is disturbed, or there is insomnia. Disordered action of the heart is of frequent occurrence. Constipation is the rule. There is undue susceptibility to cold. All these symptoms may be measurably explained, in many instances, by co-existing anæmia. The dyspepsia leads to impoverishment of the blood, often because alimentation is reduced below the needs of nutrition, and this condition tends in no small degree to increase the dyspepsia and render it persistent. The symptoms referable to the mind are, doubtless, in part secondary to the dyspepsia, but I have long held the opinion that the mind plays an important part in the ætiology of the affection.

In 1841 I contributed to the "American Journal of the Medical Sciences" a paper entitled "Dyspepsia as connected with the Mind." In that paper I described the mental disorders often associated with difficult or labored

* *Vide* articles by Leube and Ewart in "Verhandlungen des Congresses für Innere Medicin," Dritter Congress, Wiesbaden, 1884, together with a discussion by several members of the Congress. Leube has demonstrated the existence of nervous dyspepsia, without any disturbance of gastric digestion, by withdrawing the contents of the stomach at different stages of the process of digestion, and ascertaining, by the use of the stomach-tube, the duration of this process in the stomach of patients suffering from dyspepsia.

* Read before the New York State Medical Association, November 18, 1884.

digestion, and expressed the opinion that these disorders are not entirely effects of dyspepsia, and that the causes of this affection may be mental. This view of the aetiology was at the time novel, and, at the present time, is by no means fully recognized either in theory or practice.

I had been led to regard dyspepsia as, in many instances, referable to the mind, by personal experience. Notable distress attending the process of digestion, and accompanied by great mental depression, despondency, and apprehensions, followed a change from college excitements and pleasures to a comparatively solitary life in the country and the commencement of the study of medicine. Instantly on beginning to attend medical lectures in the city of Boston, and coincident with exuberant spirits, dyspepsia disappeared.

At the time when the paper to which I have referred was written, dyspepsia, in New England, prevailed very generally among the classes of society which may be distinguished as educated, or, perhaps, as may be better said, the reading and thinking classes. Exemption from this affection was an exception to the rule. The contrast between that time and the present time in that regard is striking.

How is this contrast to be explained? The explanation in part relates to the mind as involved in the causation of dyspepsia, and partly to dietetics.

A half-century ago most maladies were supposed to originate in the *primæ viæ*, as the digestive organs were significantly called. It was enjoined upon all who desired to preserve health to watch closely these organs, and to make a constant and careful study of diet with reference to digestion. Dietetics and digestion, next to the weather and politics, furnished the topics for common conversation. The evils of the gratification of the appetite for food furnished themes for writers and preachers outside of the medical profession. Moral as well as physical ills were referred to errors in diet, for which the sufferers were held responsible. There are a few at the present day who entertain those ideas which were so common fifty years since. Within a few months I have received a sermon by a clergyman in which a strictly regulated and spare diet is recommended as indispensable not only for health, but for good morals and religious faith.

The views generally entertained, at the time to which I have referred, largely by physicians and almost universally by non-medical sanitarians, may be summed up in a few maxims as follows: Eat only at stated periods—twice or thrice daily, never between meals, no matter how great may be the desire for food. Never eat late in the evening or shortly before bedtime. In the choice of articles of diet, carefully select only those which reason and personal experience have shown to be best digested; never yield to the weakness of eating any article of food simply because it is acceptable to the palate. In order to avoid the temptation of overeating, let the articles of food be coarse rather than attractive, and eschew all the devices of the cuisine. Always leave the table hungry. Study personal idiosyncrasies, and never indulge in kinds of food which, although wholesome for most persons, are injurious to the few who are peculiarly organized. With reference to this last maxim,

bear in mind that "what is one man's meat is another man's poison." In order to secure, as effectually as possible, a proper restriction in the quantity of food, it was recommended by some physicians, and to some extent practiced, that every article be carefully weighed at meal-times, and a certain quantity by weight never exceeded. Vegetarianism, or Grahamism, was advocated and practiced by many. Total abstinence from drink was considered by a few a good sanitary measure, compelling the body to derive the fluids needed exclusively from fruits, vegetables, and other solid articles of diet. Restriction in the amount of drink, as far as practicable with regard to the power of endurance, was very generally deemed important, so as not to dilute the gastric juice.

Dyspepsia formerly prevailed chiefly among those who adopted, to a greater or less extent, the foregoing maxims. It was comparatively rare among those who did not live in accordance with dietetic rules. The affection is much less prevalent now than heretofore, because these maxims are much less in vogue. The dyspeptics of the present day are chiefly those who undertake to exemplify more or less of these maxims. It seems to me, therefore, a fair inference that dyspepsia may be produced by an attempt to regulate diet by rules which have for their object prevention of the affection which they actually produce. It is to be added that an important causative element involved in the practical adoption of these rules is the attention thereby given to digestion. It is by introspection and constant watchfulness of the functions of the stomach that the mind exerts a direct influence in the causation of this affection.

The foregoing views of the aetiology of dyspepsia foreshadow the dietetic treatment. Considering the limits to which this paper must be restricted, I can perhaps best submit the general plan of treatment which I have for many years pursued by supposing a hypothetical case.

A patient presents the symptoms which denote difficult or labored digestion, with more or less of the associated symptoms which have been enumerated. We will assume the diagnosis to have been made positive by excluding gastric ulcer, gastritis, carcinoma, and other lesions of the digestive organs. Renal and cerebral diseases have also been excluded.

I am accustomed then to ask the patient, "Do you regulate your diet?" The answer is generally in the affirmative, and it is often given promptly and emphatically. Then I say: "This is a good reason for your having dyspepsia; I never knew a dyspeptic get well who undertook to regulate diet." The patient is usually not a little surprised at these assertions, and may take issue with them. The success of the treatment will depend on the willingness and confidence with which the patient enters upon a reform in dietetic habits. "What system of diet do you advise?" is a question which is naturally asked. The answer is, that I have no rigid system of diet to advise, but that food must be taken in sufficient quantity and sufficiently varied to satisfy the requirements of assimilation and nutrition, and that this is not to be done by adopting any fixed rules regulating the amount and the kinds of food. "How am I to be guided?" is a question which naturally follows. The reply

is: "Not by theoretical views of nutrition and digestion, no matter how much they may appear to be in accord with physiological and pathological doctrines, but by the appetite, the palate, and by common sense." The patient, if intelligent (as dyspeptics usually are), may be reminded of the fact that nature has provided appetite and the gustatory sense for the regulation of diet as regards quantity and variety. To oppose these natural regulations is to do violence to nature. If the patient is a clergyman, he may be taxed with a want of sufficient reliance on Providence. Providence or nature takes care of digestion, leaving only the claims of appetite and the palate for human oversight.

"But," the patient will be likely to say, "am I not to be guided by my own experience, and avoid articles of food which I have found to disagree with my digestion?" The answer is, that personal experience in dietetics is extremely fallacious. An article of diet which may cause inconvenience or indigestion to-day may be followed by a sense of comfort and be well digested to-morrow. A variety of circumstances may render the digestion of any article of food taken at a particular meal labored or imperfect. As a rule, articles which agree with most persons do not disagree with any, except from casual or accidental circumstances, and the expectation, in the mind of the patient, that they will disagree. Without denying that there are dietetic idiosyncrasies, they are vastly fewer than is generally supposed, and, in general, it is fair to consider supposed idiosyncrasies as purely fanciful. Patients not infrequently cherish supposed idiosyncrasies with gratification. The idea is gratifying to egotism, as evidence that Providence has distinguished them from the common herd by certain peculiarities of constitution.

Dyspeptics generally have many questions to be answered. They are proverbially long-winded in giving a history of their experiences, and inquisitive as regards information from their physicians. Supposing our patient to be a type of this class of patients, a full account of the matters discussed in a consultation would extend this paper to too great length. Suffice it to say that the maxims which have been enumerated as causative of dyspepsia are to be reversed in pursuing the plan of treatment which it is the purpose of this paper to submit. The instructions, abbreviated, will then be as follows:

Do not adopt the rule of eating only at stated periods—twice or thrice daily. Be governed in this respect by appetite; eat whenever there is a desire for food. Eat in the evening, or at bedtime, if food is desired. Insomnia is often attributable to hunger. In the choice of articles of diet, be distrustful of past personal experience, and consider it to be a trustworthy rule that those articles will be most likely to be digested without inconvenience which are most acceptable to the palate. As far as practicable, let the articles of diet be made acceptable by good cooking; as a rule, the better articles of food are cooked, the greater the comfort during digestion. Never leave the table with an unsatisfied appetite. Be in no haste to suppose that you are separated from the rest of mankind by dietetic idiosyncrasies, and be distrustful of the dogma that another man's meat is a poison to you. Do not undertake to estimate the

amount of food which you take. In this respect different persons differ very widely, and there is no fixed standard of quantity which is not to be exceeded. Take animal and vegetable articles of diet in relative proportions as indicated by instinct. In the quantity of drink, follow Nature's indication, namely, thirst. Experience shows abundantly that, with a view to comfortable digestion, there need be no restriction in the ingestion of fluids.

It is perhaps needless to say, but in justice to my subject it should be considered, that in these few remarks I have given but a rough outline of the dietetic treatment of dyspepsia, according to the general plan which for a long time I have advocated, and of the merits of which I am able to speak from not an inconsiderable experience. There are various incidental points of inquiry, and certain qualifications of statements, which a full consideration of the subject would embrace. The ground which I take is, that the diet which in healthy subjects is conducive to the preservation of health is the diet which is desirable in cases of dyspepsia. Restrictions of diet when digestion is difficult or labored, with a view to adaptation to a supposed diminished capability of the digestive organs, I believe to be never successful, and injurious in proportion as the restrictions involve diminished assimilation and nutrition. It is a fallacy to suppose that the digestive organs in dyspepsia need rest. Exercise of the functions of the different organs of the body tends to the maintenance of their functional capabilities. Some old writer said that the stomach was like a school-boy: unless kept pretty constantly occupied it was sure to get into mischief. If there is an important practical truth in this remark. If the stomach behaves perversely, like the mischievous school-boy, the patient should conquer the stomach, and not the stomach the patient. This simile may sometimes be used with advantage in order to make patients not afraid to rely upon their digestive powers.

This paper, on account of the limitation as to time, does not afford an opportunity for the introduction of reports of cases; were it otherwise, I could cite many illustrations of the success of the general plan of treatment which I have outlined. In some cases which have come under my observation, patients who had been chronic dyspeptics for many years found themselves at once cured by adopting a full and varied diet, following nature's indications and taking no thought of what they should eat or what they should drink, and occupying the mind with other topics than those relating to their digestion.

Finally, let us learn a practical lesson from our observations of the class who "live to eat"—the *gourmet* and the *gourmand*—they "who fare sumptuously every day." Dyspeptics are not common among this class. An overstimulated appetite may lead to other affections—such as gout, indigestion, fatty heart, etc.—but rarely to dyspepsia.

Let us learn another practical lesson from our observations of those who "eat to live"—the hard-working laborer or mechanic, who is satisfied with obtaining an ample supply of food, and who has no time to study, by his personal experience, the relations of diet to digestion. Our dyspeptic patients do not belong to this class.

Let us learn another lesson from our observations of the

classes to which our dyspeptic patients do belong. They are, for the most part, lawyers, clergymen, doctors, students, teachers, artists, bankers, literary men, and men of leisure. Of those belonging to these classes, they become dyspeptics who study, from the best of motives, how to live, as regards diet, so that "digestion shall wait on appetite, and health on both." And for this end they endeavor to regulate diet by watchfulness, personal experience, theoretical notions, or, perhaps, scientific principles.

Let a fourth lesson be learned by observing the results of the dietetic treatment of dyspepsia based on the conclusions to be drawn from the previous lessons.

FOUR SELECTED TYPICAL CASES OF DIABETES MELLITUS NOT BEFORE REPORTED.*

By AUSTIN FLINT, JR., M. D.,

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In May, 1884, I reported fifty cases of diabetes mellitus to the "Section on Practice of Medicine and Materia Medica of the American Medical Association," and to this report, which is contained in the "Journal of the American Medical Association," July 12, 1884, I refer the Fellows of this Association for full details of the treatment employed. Since this publication, I have had under treatment four cases of diabetes, which are typical in many of their characters, illustrating different conditions of the disease and the effects of treatment in patients of different ages.

The first case, which, for my own convenience, I shall designate as No. LIII, illustrates the difficulties met with in treatment when the disease has been allowed to run its course without restraint for a number of months.

CASE LIII.—The patient was an unmarried woman, twenty-two years of age, rather slight in figure when in health, and of medium height. Her parents are living and in perfect health. The family history failed to show any hereditary tendency to this or to any other disease. When in health the patient weighed 140 pounds. This was the weight about three years before she came under my observation. As far as I can judge from the history of the case, the disease must have existed for two years, or perhaps longer. In January, 1884, the patient had lost about twenty pounds in weight, had excessive urination, an abnormally great appetite and thirst, and suffered from a feeling of exhaustion after moderate exercise. At that time she passed, as was stated, from six to eight quarts of urine in the day, which was loaded with sugar. Before the diabetes had become developed, she had enjoyed perfect health with the exception of dysmenorrhœa, which had existed since the age of eighteen. She began to menstruate at the age of thirteen, and at the age of eighteen fell from a wagon, striking on her feet, and sustaining no apparent injury at the time. Since this fall, however, she had persistent dysmenorrhœa, suffering intense pain for six or eight hours at every period. She has not menstruated since February, 1884; and in January and February, 1884, she suffered no pain. She was examined in October, 1884, by Dr. James B. Hunter, who found retroversion, but advised no interference unless menstruation should return.

* Read before the New York State Medical Association, November 20, 1884.

When the patient consulted me on August 25, 1884, she presented all the characteristic general symptoms of diabetes mellitus, including excessive appetite and thirst, weariness after slight exercise, some pruritus vulvæ, and an increased quantity of urine. Her weight was ninety-two pounds. During the winter of 1883-'84, and the summer of 1884, she had indulged excessively in starchy matters and sweets, and since January had taken various remedies without experiencing any benefit.

August 26th.—The urine of the twenty-four hours measured 159 fluidounces, was pale, of a sweetish odor, and had a specific gravity of 1.037. It contained 28 grains of sugar to the fluidounce, giving a discharge of 4,256 grains (8 ounces, 416 grains) in the twenty-four hours. There was no albumin. Microscopical examination revealed the presence of a few octahedra of oxalate of lime with some vaginal epithelium. She was at once put upon a strict anti-diabetic diet, all starch and sugar being rigidly excluded, and was ordered to take three drops of Clemens's solution of arsenite of bromine three times daily.

September 1st.—The quantity of urine was reduced to 112 fluidounces. The sugar was reduced to 12½ grains to the ounce, or 1,400 grains in the twenty-four hours. The excessive appetite and thirst and the pruritus vulvæ had disappeared. The dose of the Clemens's solution was increased to five drops. She felt better and stronger, and the weight (taken September 3d) was increased to 99 pounds.

10th.—The weight had increased to 103 pounds, and the quantity of urine was reduced to 96 fluidounces, with a specific gravity of 1.023½. The total discharge of sugar for the day was 1,152 grains. The urine, however, presented a trace of albumin. The treatment was continued, with the addition of two grains of quinine three times daily. She had slight uterine pains on September 8th, 9th, and 10th, this being the time in the month when her periods occurred, but there was no menstruation. There was no unusual thirst, and the appetite was normal. She bore the strict anti-diabetic diet very well.

24th.—The weight had slightly decreased, being reduced to 101 pounds. The quantity of urine was 80 fluidounces, with a specific gravity of 1.025, and containing in all 800 grains of sugar. Since September 10th she had been losing strength as well as weight. The treatment was continued, with the addition of one quarter of a pint of cream and a tablespoonful of whisky twice daily.

October 10th.—The weight was reduced to 96 pounds. The quantity of urine was 80 fluidounces, with a specific gravity of 1.023, and containing in all 720 grains of sugar. The patient had followed the treatment, dietetic and medicinal, most faithfully. She had taken, for about four weeks, griddle-cakes made of Hecker's farina, which contains only one or two per cent. of starch. Notwithstanding the rigid diet, however, I had been unable to reduce the quantity of sugar below 9 or 10 grains to the fluidounce of urine, or 700 to 800 grains in the twenty-four hours, and the strength and general health showed no improvement since September 24th. I decided to try to arrest the discharge of sugar by an absolute fast of twenty-eight hours—a method recommended by Cantani. To this plan the patient cheerfully assented. She accordingly fasted from 8 A. M., October 10th, to 12 M., October 11th, remaining in bed most of the time, and taking nothing but water. The urine passed at the close of the fast contained two grains of sugar to the fluidounce; but it presented oxalate of lime, a small quantity of albumin, and a few small, granular casts. She bore the fast very well, had a good appetite the next day, and for several days felt better than she had for weeks. Following the fast, the former treatment was resumed.

15th.—The quantity of urine was somewhat reduced. Its specific gravity was 1.030, and it contained nine grains of sugar to the

fluidounce. There was still a little albumin, with a few granular casts. The patient felt her health in general on the following day. She was in much better general health than when I first saw her on August 18th, but I had found it impossible to arrest the discharge of sugar.

My prognosis in this case is not entirely favorable. It is probable that the excessive indulgence in sweets and in starchy articles of food for several months during the height of the disease has rendered the glycosuria uncontrollable beyond a certain point. Her present safety undoubtedly lies in an anti-diabetic diet, and a return to sweets and starch would probably be promptly followed by a return of all of the grave symptoms of the disease.*

The following case is in striking contrast to the one just recited:

CASE LV. The patient was a young girl, of medium height and development, fifteen years of age. Her father and mother are living and in good health, and there is no hereditary tendency to disease. A sister of the patient died at the age of nineteen, probably of diabetes mellitus. The patient began to menstruate at the age of thirteen and has menstruated regularly ever since that time. She was in perfect health up to January, 1884, when she began to lose flesh slightly, and was "tiring" for a few weeks. She soon improved in general health and was apparently well until the middle of August, 1884, when she was found to be passing about two quarts of urine daily, the specific gravity of which was said to be 1.052. Since that time she has been on a moderately restricted diet and has taken various remedies. She suffered somewhat from thirst during August and September. Her urine was found sometimes to contain a little sugar and sometimes was free from sugar.

Observation.—I made a thorough physical examination of the patient and found no disease. The urine was rather less in quantity than normal, had a specific gravity of 1.031, and contained no sugar. The only abnormal condition of the urine was the presence of a large number of octahedra of oxalate of lime. The diet had been moderately restricted. I ordered that the diet be unrestricted for twenty-four hours.

10th.—After twenty-four hours of unrestricted diet, the quantity of urine was slightly increased. It had a specific gravity of 1.036, and contained thirty-one grains of sugar to the fluidounce. There were none of the characteristic general symptoms of diabetes. I ordered a strict anti-diabetic diet, three drops of Clemens's solution of arsenite of bromine three times daily, the dose to be gradually increased to five drops, and a pill of one quarter of a grain of codeine and one twelfth of a grain of podophyllin at night, to relieve constipation should it be present. The patient then left on her home in Virginia.

16th.—I heard from this patient and received a specimen of urine. The treatment had been followed strictly. She had felt perfectly well since her return to Virginia and was passing urine in normal quantity. The urine had a specific gravity of 1.015 and contained no sugar.

In this case the glycosuria seemed to be easily controllable. After examining the urine, I wrote to the friends as follows:

I suggest that the dietetic and other measures of treatment be strictly followed until the middle of December. If, at the

end of that time, the urine should continue free from sugar, the patient may begin to eat a little bread and gradually return to the usual diet, except that she should never eat sugar or sweets. The urine should be examined from time to time while she is in process of returning to the normal diet.

My prognosis in this case is favorable. With proper attention to the diet, I should expect a cure; but it will be necessary to examine the urine occasionally for a long time, in order to detect, at the earliest moment, any tendency to a return of the disease.

CASE LI.—This patient was a robust man, unmarried, thirty-four years of age, five feet seven inches in height, and weighed 177 pounds. He had always eaten largely of bread and sweets. For several weeks he had a moderate increase in thirst and had not been "feeling very well." His urine had been examined, and it was said to contain sugar. His previous health had been good. He had occasionally committed sexual excesses.

I examined this patient on April 8, 1884, and found no disease. The urine was somewhat less in quantity than normal, with a specific gravity of 1.035 and was turbid with urates. It contained no sugar. During the day on which this urine was passed, the patient had abstained from bread and sweets.

April 10th.—I examined a specimen of the urine passed during the day, the diet having been unrestricted. It had a specific gravity of 1.026 and contained a small quantity of sugar.

June 2d.—Since April 10th, the patient had followed a strict anti-diabetic diet and had taken three drops of Clemens's solution of arsenite of bromine three times daily. His urine had a specific gravity of 1.030, was normal in quantity, and contained no sugar. The patient felt perfectly well, but his weight had been reduced to 167 pounds. The dose of Clemens's solution was increased to five drops.

July 16th.—The patient was still perfectly well, the diet was not irksome, and the urine was normal, free from sugar, and had a specific gravity of 1.024. The weight had been reduced to 161 pounds. The treatment was continued.

August 1st.—The patient continued well, but the weight was reduced to 159 pounds. The urine was normal, free from sugar, and had a specific gravity of 1.029. The treatment was continued.

14th.—The patient continued well, and the weight had increased to 161 pounds. The urine contained no sugar and had a specific gravity of 1.026.

20th.—The patient continued in the same condition. The weight was 157 pounds, and he looked and felt in perfect health. The urine contained no sugar and had a specific gravity of 1.031. The patient then passed from under my observation. The Clemens's solution was stopped and he was instructed to gradually return to a normal diet, but never to eat sugar or sweets, and to carefully abstain from all excesses of any kind.

In this case, the patient being a young and vigorous man, the glycosuria was readily controllable, and an apparent cure was effected.

The fourth case is that of a man, fifty-nine years of age, in whom the disease, although not at least a year's standing, yielded promptly to treatment.

CASE LII.—The patient, a married man, fifty-nine years of age, was 5 feet 10 inches in height, and weighed 227 pounds. He was robust, had always enjoyed good health, and had been rather a free liver, but without excesses of any kind. The family history gave no evidence of hereditary tendency to disease. For the nine months previous to the time that he came under my observation, he had suffered from excessive urination, an-

*The following case is a further illustration of the fact that the glycosuria in some cases is not easily controllable. It is a case of a man, fifty-nine years of age, who had been suffering from diabetes mellitus for several years. He was a free liver, but without excesses of any kind. The family history gave no evidence of hereditary tendency to disease. For the nine months previous to the time that he came under my observation, he had suffered from excessive urination, an-

noying thirst, abnormal weariness, and impairment of appetite. During this period he had lost about twenty pounds in weight.

August 11, 1884.—I examined a specimen of the urine. Its quantity in twenty-four hours had not been measured, but was undoubtedly excessive. It had a specific gravity of 1.023 and contained considerable sugar with abundant uric-acid crystals. He was at once put upon a rigid anti-diabetic diet, with three drops of Clemens's solution of arsenite of bromine three times daily.

19th.—The general diabetic symptoms had entirely disappeared. The urine was normal, with a specific gravity of 1.020, and free from sugar. The weight was unchanged at 227 pounds.

26th.—The patient felt perfectly well. The urine had a specific gravity of 1.012½ and was free from sugar. The dose of Clemens's solution was increased to five drops.

September 28th.—The patient continued to feel perfectly well. The urine had a specific gravity of 1.030 and was free from sugar. The weight had increased to 235 pounds. The Clemens's solution was stopped, and the patient was allowed to eat a little bread.

October 11th.—The patient felt that he was entirely cured. His weight was 233 pounds. The urine was perfectly normal, had a specific gravity of 1.020, and was free from sugar. He was directed to follow a reasonable diet, not abstaining entirely from starchy matters, but avoiding sugar and sweets. He was directed to have his urine examined again in about six weeks.

The limited time at my disposal prevents me from giving the diet-table for diabetics and other details of treatment, which would be merely a repetition of what is contained in my paper on the "Treatment of Diabetes Mellitus," published in the "Journal of the American Medical Association," July 12, 1884, and in the sixth edition of my little book on the "Chemical Examination of the Urine in Disease." The diet-table is very varied and is not difficult to follow, the greatest hardship to patients being deprivation of bread. It is a curious fact, however, that, after following a strict diet for two or three weeks, diabetics lose their craving for prohibited articles of food, and the diet becomes by no means irksome. Bread made of Hecker's anti-diabetic flour and porridge and cakes made of Hecker's farina are sometimes much relished. These articles contain between one and two per cent. of starch and do not seem to be injurious. The patients, in all of the cases here reported, were in good circumstances and both willing and able to follow strictly the prescribed diet.

In presenting an account of these four typical cases to the Association, I have purposely put the unfavorable case first. This is the second case that I have met with in which, patients being willing to submit absolutely to treatment, I have not been able to arrest the glycosuria. In this case, for many months the patient indulged inordinately in sweets; and the disease, which was complicated by albuminuria, had become so thoroughly confirmed that, although the general symptoms were controlled, even total abstinence from food would not remove the sugar from the urine. In the three remaining cases, sugar never appeared in the urine after the first week of treatment. The effects of treatment in these cases and in others that I have reported lead me to repeat the quotation from Cantani that I have already made in the paper read by me before the Medical Section of the American Medical Association:

"Diabetes has become to-day a disease easily and certainly curable, provided that the treatment (cure) be not begun too late."

A NEW PROCEDURE IN PARACENTESIS THORACIS.*

By THOMAS F. ROCHESTER, M.D.,

BUFFALO, N. Y.

Those who have often practiced paracentesis thoracis in chronic pleurisy, and especially in empyema, have frequently experienced great difficulty in making a sufficiently large and free opening to admit of the proper placing of drainage-tubes, or even of inserting a good-sized trachea and cannula in the chest cavity. This is doubtless caused by the approximation of the ribs, from the influence of chronic pleuritis upon the intercostal muscles. To obviate this, various expedients have been resorted to, such as gradual dilatation with sponge tents, and even trephining or excision of a rib. The writer thinks he has hit upon a method which will overcome the contraction with certainty and safety, and will greatly facilitate all necessary local operations. Perhaps a brief narration of three cases will present the procedure more clearly to you than a simple description of the method.

CASE I.—In September, 1883, I was invited by Dr. Seeley, of Attica, to see Mr. P., a well-to-do farmer, forty-five years of age. He had been ill for three months. I found him sitting up—he could not lie down for dyspnoea; both legs and feet were much swollen; he had cough, with muco-purulent expectoration; had irregular chills and night-sweats; pulse 100 and irregular; no appetite; percussion resonance fair over entire posterior portion of chest; flat over anterior surface of right chest from second rib down, with bulging of intercostal spaces. Percussion resonance clear over left chest anteriorly, except over precordial region; heart apex in sixth intercostal region and two inches to the left of a line drawn through the left nipple; auscultation posteriorly, respiratory murmur, with occasional bronchial râles distinct everywhere; anteriorly, bronchial respiration in right subclavian region as far as third rib; elbow that no respiratory sound whatever; puerile respiration marked in left lung.

Diagnosis.—Sacculated empyema; a large and long hypodermic needle was passed between the fifth and sixth ribs, anteriorly, on the right side; the barrel of the syringe was filled with thick, white, odorless pus; paracentesis was decided upon; a sharp-pointed bistoury was inserted close to the upper border of the sixth rib, and an incision two inches long was made in the intercostal space; a very slight purulent discharge followed. We now proceeded to insert a large drainage-tube, but found it impossible on account of the close approximation of the ribs. These we tried to separate by various instruments, but in vain. I then examined the wound with the forefinger, and found that as I pressed firmly the ribs began to yield and separate, and then, to my great delight, the finger passed its whole length into the chest cavity, and, on its withdrawal, was followed by a copious discharge of purulent fluid. "Ah!" exclaimed Mr. P., with a gush of relief, "I would have given you five hundred dollars just now to take away your finger, and now, if I had it, I would give you as much for having put it in." Cod-liver oil, 3j, with twenty drops of the muriated tincture of iron, three times daily, was prescribed—a favorite prescription of the writer in such

* Read before the New York State Medical Association, November 19, 1884.

cases. In about two months Mr. P. was entirely restored to health. The chest cavity was twice washed out with warm water slightly carbolized.

CASE II.—Mr. F., twenty-one years of age, commercial traveler, of Jewish race, extremely nervous and timid; previous history good; parents and brothers and sisters healthy. Has been ill for two months. Has slight cough and night-sweats; is greatly emaciated; pulse 120, respiration 32. Has all the physical signs of effusion in right pleuritic cavity. The hypodermic needle withdrew thick, white, inodorless pus. The operative procedure was precisely the same as in Case I, except that the ribs were separated more easily, more quickly, and with less pain, as would be expected from the age of the patient. Rapid and entire recovery ensued. The chest cavity was several times washed out with a weak solution of boracic acid. I was invited to see this patient by Dr. Frank, of Buffalo.

CASE III.—John G., inmate of Buffalo General Hospital, German, forty-five years of age. Habits had been intemperate for many years. Has chronic pleurisy with very large serous effusion. Had been aspirated by Dr. Herman Mynter twice before admission to the hospital. Since admission has been aspirated twelve times in eight weeks. Has been placed upon tonics and diuretics. Chest has been painted often with the tincture of iodine, and the recumbent position has been almost constantly maintained. He has, however, steadily lost ground, and the effusion recurs rapidly after aspiration. Abdominal dropsy and oedema of the lower extremities also become apparent. There is no albuminuria and no cardiac disease. Cirrhosis is suspected. It was decided to introduce a drainage-tube. This was done as in the other two cases, but was not as well borne; for four days he had sinking turns, and for the first two days the discharge was deeply tinged with blood. He began to rally at the expiration of a week, and for three weeks distinctly improved, but again failed, and died five weeks from the date of the operation. The post-mortem examination showed half a pint of bloody serum in the pleural cavity, the costal pleura very red and engorged, the pulmonary pleura covered with thick, false membrane, and the lung pressed upward and backward, and so small and condensed that it was about the size of an adult hand. It did not, however, present any other evidence of disease. The pericardium was pretty fully distended with serous fluid. The left lung and left pleura were healthy. The liver was contracted and cirrhotic. All the other organs healthy.

The writer has had quite an extensive experience in paracentesis thoracis, and has often been annoyed in trying to make a sufficiently large and permanent opening for a drainage-tube of proper caliber. He trusts that he has hit upon a method which will obviate this difficulty for others and himself, and respectfully submits it for consideration and comment to the New York State Medical Association.

MODERN PROGRESS IN MATERIA MEDICA AND THERAPEUTICS.*

By E. R. SQUIBB, M. D.,
BROOKLYN.

[HAVING premised that his twenty-five years' experience in supplying a portion of the medical profession with some of the established articles of the materia medica had enabled him, to a great degree, to ascertain the therapeutical

preferences of a great body of physicians who were quite outside of medical organizations, or were simply enrolled without taking any active part in their proceedings, but that what he had to say on the present occasion was not so much a retrospect founded on this knowledge as a forecast of what progress in the next few years was pointed to by this experience, Dr. Squibb proceeded as follows:]

The public, though much interested in abstruse researches and ingenious speculations and theories of health and disease, is only entertained or amused by them, and the profession not only gets little substantial credit for them, but often has them turned against it in ridicule. All this is becoming better understood and realized, and the physician is looking more and more carefully, not only for knowledge, but for the means of applying it. He makes the accurate investigation of disease, but does not rest there, but tries to control the abnormal conditions found. Much less is heard of expectancy, much less of "Young Physic," than formerly. Active agencies carefully studied and skillfully used are much more common now, and the search after such agencies is even becoming hurtfully keen, so that there is danger of the opposite extreme from the former expectancy.

Instances might easily be given of individuals of no uncommon attainments or opportunities, gifted with neither the polished manners nor liberal morals which so often contribute to one kind of success, but fairly equipped with the known means of controlling disease, who, often in frontier populations, within five or ten years, show to the communities in which they work the utilitarian value of a doctor, and through him of his profession also. Success to his community means success to him and to his profession at large. And the success which begins in the actual results of his skill and labor in his community endures and increases just in proportion to its utilitarian character. Thermometers, urinometers, litmus-paper, test-tubes, and a few reagents, are always found in the orders of such physicians, and plain microscopes, and even sphygmographs, occasionally. Their materia medica proper is commonly simple, the articles not numerous, but effective, and rarely outside of the Pharmacopœia, and their orders for the newest and best advertised remedies are often conditional, always in very small quantities, and, as a general rule, not repeated.

Few will doubt the dependence of the profession for success upon its utility to the public, and very much of this utility must always depend upon therapeutics, and this, in turn, upon the materia medica. Hence, if there be a progress in materia medica and therapeutics, it is an improvement of the very foundation upon which the medical profession rests, and its importance in the future can hardly be overestimated.

Another important reformation that appears to have been slowly and steadily going on in the near past is in the value of the word cure. The old idea of specific or particular diseases and specific cures seems to have undergone considerable modification for the better, not only in the intelligent portion of the people, but also in the medical profession. That diseases are all so many definite entities, for each of which there is a special cure or antidote, if it

* An abstract of a paper read before the New York State Medical Association, November 18, 1884.

could only be discovered, and that incurable diseases are only those for which cures have not yet been discovered, but for which they may be discovered at any time, is a doctrine which common education in the sciences is steadily bringing into a newer and truer light. Many physicians successfully treat disease, if not diseases, but very few undertake cures. Neither do intelligent persons call physicians with the unmodified idea of being cured. But they rather seek for skilled advice, and submit themselves with more or less confidence to be so controlled that they may have the best chances of speedy recovery. And, when well, they are not so often, in their own language—and still more rarely in that of the physician—cured, but have simply recovered. Modern progress seems to indicate that the farther both the public and the profession get away from the old meaning of this word cure, the better, for, when it is properly understood in the modern light of cause and effect, much complex, indiscriminate drugging will be saved, and the dealers in cures—from corn cures to cancer cures—will have their mercantile enterprises better understood. If modern therapeutics is coming to have less and less to do with cures, in the old acceptance of the word, then *materia medica* is surely equally progressive, for there are probably hardly any now who believe in the possibility that any drug should cure any disease, and therefore it is doubtful now whether there be much chance left, in the profession of medicine, at least, for repetitions of the episodes of cundurango, Missisquoi water and mud, and Chian turpentine. But, as the doctrine of cures disappears, the utility and certainty of remedial agents become better established, so that the modern progress is attained in both directions.

Another element in the progress of the near past is a gradual and steady emancipation from the trammels of arbitrary doses of medicines. Physicians are no longer satisfied now with the doses given in the books. With increasing knowledge and broader views they now look for effects, and the time is, perhaps, not far off when the only use of stated doses of medicines will be to know what quantity to begin with. It has come to be very commonly recognized that different persons, and even different conditions of the same person, are very differently susceptible to the action of medicines, and that, within certain limits, quantities must be adjusted almost to each individual case. In three successive cases of confirmed epilepsy in adults, the number of seizures were not sensibly reduced short of 100 grains of bromide of potassium a day in one case, 160 grains in a second case, and 240 grains in the third case, and these quantities produced only moderate bromism. Had the doses of the standard books been adhered to, two out of the three cases would have been unimproved by the medicine.

There are cases wherein the ringing in the ears will be caused by two grains of sulphate of quinine, and there are others which require sixty grains to give this sign of saturation, and there are persons in whom different quantities are required at different times. To treat a recurring malarial fever without recognizing these facts is to fail of success, and discredit both the physician and the medicine, in a considerable number of the most difficult cases, where most credit is to be gained. Dr. W. H. Van Buren,

more than twenty-five years ago, emphasized this liability to be trammelled by arbitrary doses. In the treatment of consecutive syphilis he found a number of patients recovered under the use of 40 grains of iodide of potassium a day. But others were not impressed by less than 100 grains a day, while a few required 480 grains a day to give similar results. His teaching, and that of others who followed him, applying the same principle to other agents, have done much for the modern progress in this important matter of doses, for it is generally realized now among the best therapeutists that no remedy can be properly considered as having failed until it has been pushed to a physiological or a pathological effect.

[Reference was then made to the greater scrutiny now applied by the profession to the purity of the medicinal preparations employed by them, to the growing tendency of physicians to confine themselves within the scope of the *Pharmacopœia*, to the abandonment of complex prescriptions, to the precision with which doses were measured, and to certain limitations of the availability of the alkaloids and the glucosides; and the paper concluded as follows:]

Finally, perhaps the greatest progress of all has been in the power and definiteness of the agents used, and in judging of the manner and effect of using them. Many years ago, when, among the first of these very definite and powerful agents, the American hellebore came into use for controlling the action of the heart, it was objected that its use was merely controlling a symptom of disease without going to the root of the matter at all. The pneumonia went on all the same, and perhaps the depressing action of the drug was simply added to the depressing action of the inflammation, and harm rather than good might rationally result. It took some time to show by actual experience that the drug could be given in controlling quantities without more depression than was needed in a sthenic disease, and that the lowering of the pulse-rate by fifteen to twenty per cent. meant the sending of fifteen to twenty per cent. less of inflammatory blood through an inflamed, congested, and oppressed organ, whose obstructed functions were threatening life, and therefore that treating this pulse symptom was really treating the whole of the disease by controlling its prominent element. It was thus clearly recognizable that, by subtracting one prominent element or symptom from the group which constitute a disease, the bond is broken, and it then tends to disintegration, just as, when an atom or a group of atoms is subtracted from a molecule, it splits up and loses its identity and its reactions.

Then, when bromide of potassium was successful in controlling the seizures of epilepsy, it was objected that it merely controlled the expression of the diseased condition without affecting that condition, since when the medicine was omitted, or was used in too small quantity, the seizures would recur. But in the progress made in the near past it has been abundantly shown that when the bromide is skillfully managed and continued through a long time, with great perseverance and care, for a sufficient length of time after the attacks have ceased, many patients are no longer in the condition which caused the attacks, and that thus, in treat-

ing the principal symptom, the condition causing it has also been treated successfully.

Again, in those agents which simply reduce temperature—take, for example, the use of salicylates in acute rheumatism—the effect is to control one symptom primarily; but it happens that, through the close relationship of symptoms, two others of equal importance are also controlled—namely, the pain and swelling. It is maintained that the disease goes on, and commonly runs its course; but it is admitted that it is occasionally cut short, and that it is almost always rendered comparatively free from high fever, pain, and swelling; that heart damage is less frequent and less serious, and that relapses occur less frequently.

It is needless to multiply examples to show that great progress has been made in the acquisition of definite agents and in the knowledge of how to use them, and should the next ten or twenty years prove as fertile in the resources of the medical art as is indicated by the progress of the past, the profession will occupy a much higher position in the estimation of the public than it now does.

It should not be inferred from the foregoing that all the prominent changes in relation to the materia medica within the past few years have been improvements, or for the good of either the profession or the public, for much doubtful medication has grown into common use among large numbers of physicians who do not seem to stop to think where the mercantile enterprise of the manufacturer is carrying them.

Clinical Reports.

CASES SELECTED FROM THE ORTHOPÆDIC CLASS AT THE NEW YORK POLYCLINIC.

By V. P. GIBNEY, M. D.

Acute Bursitis of the Left Knee of Four Days' Standing; prompt Recovery.—Multiple Syphilitic Dactylitis, with Gummatus Infiltration about Knee and Ankle.—Chronic Diaphysio-epiphysitis at the Proximal End of the Right Tibia, with Chronic Ostitis of the Ninth and Tenth Dorsal Vertebra, in a Child inheriting Syphilis; Recovery of Tibial Disease, with Joint-functions preserved.—Osteous Ostitis (Tuberculous?) at the Proximal End of the Tibia; Burrowing Abscess extending to Joint; subsequently a Typical Case of Chronic Articular Ostitis (White-Swelling).

CASE I.—A boy, seven years of age, apparently in great pain and quite unable to walk, presents this morning a marked fullness over the internal condyle of the left femur, and the circumference is an inch and a half greater here than over the corresponding portion of the right side. There is increased heat, as shown by palpation, and the rectal temperature is $101^{\circ}5'$. There is no fluctuation, but the parts are quite tense, the tenderness is great, and it is easily seen that the synovial cavity is free from distention. This is well shown by comparative inspection, and by a knowledge of the extent of the synovial membrane. It is true that he holds the knee in sharp flexion, and resists attempts at passive extension, although, with a little coaxing, the leg is extended, and when this is done the fullness is not manifest on either side of the tendon of the quadriceps, as you would find in case the effusion were confined to the syno-

vial cavity. Direct concussion also elicits no joint tenderness. Movement, however, in any direction does cause pain. The fullness, you will observe, is circumscribed to a locality above and around the condyle. There is no atrophy of the calf or of the thigh. It will be observed that the boy is sick, is suffering considerably, has a temperature of $101^{\circ}5'$, and that certain soft parts about the knee present signs of an acute lesion. So much, then, for the symptoms and signs now present.

What history have we?

The family is above the average for this class; not that, if a diligent inquiry were instituted, a tuberculous or a specific taint could not be discovered in some remote member of one or the other families, but for all practical purposes these are absent, and the family physician who sends me the case tells me that he knows that the family history is good.

The boy himself has always been regarded as healthy and active on limb. Ten days ago he was absolutely free from limp or halt, and began to complain that evening, after an unusually active day, of a little pain in the neighborhood of the knee; but this disappeared on the following morning, and nothing more was felt in the way of pain or stiffness until four days ago—i. e., he was well until then. The slight pain he felt six days before seemed to return, and he was enabled, by its increased severity, to locate it in and about the inner condyle of the left femur. It grew rapidly more acute, and next day (three days ago) he was confined to his bed, or rather he refused to walk, and the doctor, seeing him, ordered that he keep his bed. It was supposed that he was developing a case of acute articular rheumatism, and on this hypothesis the salicylates were administered unsparingly. Drugs have given no relief, and the impression is that he is growing worse. Hence his appearance at the clinic.

In arriving at a diagnosis, we can first exclude an acute synovitis by the absence of signs already familiar to you; we can exclude a chronic articular ostitis, because the acuteness of the invasion does not belong to a chronic ostitis; we can exclude an acute ostitis, because of the early appearance of tension and fullness in the soft parts; we can exclude a peri-arthritis (cellulitis), because of the circumscribed nature of the tumor, and by the temperature (not high enough); we can exclude, for similar reasons, an acute monoarticular rheumatism. Any one familiar with an acute periarticular rheumatism knows well enough that the lesion does not limit itself to one side of a joint.

By reference to Morris on the joints, you will find figured a bursa on the inner side of the knee, between the internal condyle and the inner head of the gastrocnemius and the semi-membranosus. This bursa sends a process between these two muscles, and is the largest of the popliteal bursae. The description is on page 370 of Morris's work, and just in this connection let me urge a study of this most excellent treatise.

This case I shall refer to the family physician, to whose kindness we are indebted for our study to-day, and our advice will be: rest in bed, rest to the parts by means of a posterior splint—the simpler the better.

The prognosis is favorable, not only for a perfect limb, but for a speedy recovery.*

CASE II.—This female child is fifteen months of age; the father is a seafaring man, and but little is known of his personal history. The mother has been married two years and ten months, has had no miscarriages, has had no primary lesion so far as can be ascertained, but was a great sufferer from headache during pregnancy, and as she was nearing term her hair fell, so

* The patient was reported to me by the doctor in attendance, a few months later, as having recovered very promptly within a month. There was a slight relapse, but this did not interfere with a perfect result.

that she was nearly bald. She did not complain of sore throat, and does not know of any eruption.

The child was a full-term child, but when three weeks of age began to have "snuffles," which, however, lasted only about three weeks. About this time it had an eruption, which was called rubecula, lasting about a week, and disappeared gradually without treatment, and not to reappear.

When seven months of age the great toe of the right foot began to enlarge and to present an inflamed appearance. Soon the index-finger of the left hand; a little later there appeared an infiltration about the left knee. Two months ago the left ankle began to show a similar condition. Two or three weeks ago the ring-finger of the left hand, and within a few days the great toe of the left foot, became involved.

So that we now have for study: 1. The first phalanx of the forefinger, left hand, presenting a marked degree of infiltration with a small cicatrix of an abscess (?). 2. The first phalanx of the ring-finger presents a moderate amount of infiltration, with a little redness of the skin. 3. Over the head of tibia, left side, on the outer aspect, is a somewhat circumscribed infiltration about the size of a half hen's egg, without any redness of the skin and without any fluctuation. 4. Over and around the external malleolus is a marked degree of infiltration without redness of skin. 5. The soft parts about the left ankle are similarly involved, but to a much less extent. 6. The first phalanx of each of the great toes is involved in the same way as the finger, and there are two small cicatrices of recently closed sinuses (?) on the great toe of the left foot, while that of the right foot is free from any such marks. There is no redness of skin on either foot.

The child does not appear to suffer much from pain, and, apart from these deformities, would not cause the mother to seek medical advice. With such a history and with such signs I think the presumption should be that the case is syphilitic, and the treatment should be directed on this supposition.

Accordingly, we prescribe the following mixture, a drachm of which is to be administered three times a day: R Potass. iodidi, 3 ss.; hydrarg. bichloridi, gr. ss.; syr. simplicis, aquæ fontanæ, aa ʒij. M. The ankle and knee joints, of course, do not require any local treatment, and we shall simply keep these joints, so to speak, under observation, expecting a subsidence of the gummata in due time.*

CASE III.—My friend, Dr. R. W. Taylor, kindly refers this case to my clinic, and writes me that he has treated the parents for syphilis. The patient is, as you see, a girl, and her age is four years. She is quite lame, and about the head of the tibia is a moderate amount of infiltration, in the center of which is the opening of a sinus leading to eroded bone. There is no effusion in the joint cavity, and the functions of the knee, so far as flexion and extension go, are perfect. The first signs were observed eighteen months ago, and it was only recently that an incision was made, and this was made without Dr. Taylor's consent or approval. The discharge has been light.

The patient also presents a kyphosis in the lower dorsal region, the deformity not being very marked. This was first recognized a month ago. The child, you will observe, has a strumous habit, and, but for the unquestionable evidences of a specific family history, would be regarded as strumous. With this history, then, a course of treatment, so far as medication goes, will suggest itself. The spine requires a fixation splint, as does also the knee. The danger is that the inflammatory process might extend to the joint and deformity ensue.

The subsequent history of this case is briefly told:

* This case soon manifested a marked change for the better, and then the mother failed to report. Not traced.

The sinus over the head of the tibia closed a few months later, the infiltration subsided, and all that remain now are the cicatrix and a little irregularity in the shape of the head of the bone. The joint functions are perfect.

It would seem that the best thing that happened to the child was the early opening of the abscess, thus giving an exit to pus that will do harm if left long in proximity to a joint.

The vertebral disease did not progress satisfactorily under the use of a steel brace, but, as soon as I could get an opportunity of applying a solid plaster-of-Paris jacket, the case did surprisingly well.

CASE IV.—A strumous looking boy, aged four and a half years, presented at my dispensary class at the hospital in the summer of 1882. He had then a mere fullness over the head of the tibia, accompanied with a little extra heat and moderate tenderness. He limped, favoring the knee, yet the joint functions as to mobility were perfect, and indeed there was no joint lesion to be detected. It was not my privilege to open an abscess in this locality as soon as it appeared, but, in conformity with a line of practice to which the hospital is committed, I had to wait the slow yet steady enlargement of this pus-sac, and I had the opportunity of noting from time to time the gradual encroachment on joint structures, until now we have the characteristic appearances of a typical tumor albus. There are now, in addition to the tibial enlargement, an expansion of the condyles, a fixation of the patella, a general boggy infiltration of all the periarticular tissues. The abscess, after growing to the size of the egg of a goose, began to pain the little fellow considerably, the skin became transparent, and a puncture was permitted. By this time, however, the drainage was done. We have now a sinus and a sanious discharge. The limb is in fair position. We shall have to accept the situation and aim to secure a partially ankylosed joint with the limb in the best position for usefulness. To this end I shall immobilize the parts with a leather splint molded to the limb by soaking in hot water, after which hardening will soon occur. Attention will also be given to constitutional treatment.

Book Notices.

BOOKS AND PAMPHLETS RECEIVED.

Lectures on the Principles and Practice of Medicine. Delivered in Chicago Medical College, Medical Department of the Northwestern University. By Nathan Smith Davis, A. M., M. D., LL. D., Dean of the Faculty and Professor of Principles and Practice of Medicine and Clinical Medicine in Chicago Medical College, etc. Chicago: Jansen, McClurg & Co., 1884. Pp. 896. [Price, \$5.]

A Practical Treatise on the Diseases of the Ear, including a Sketch of Aural Anatomy and Physiology. By D. B. St. John Roosa, M. D., LL. D., Professor of Diseases of the Eye and Ear in the New York Post-Graduate Medical School, and President of the Faculty, etc. Sixth Edition, Revised and Enlarged. New York: William Wood & Co., 1885. Pp. xxii-718. [Price, \$5.50.]

A Practical Treatise on Massage: its History, Mode of Application, and Effects; Indications and Contra-indications. With Results in over Fourteen Hundred Cases. By Douglas Graham, M. D., Fellow of the Massachusetts Medical Society. New York: William Wood & Co., 1884. Pp. x-286. [Price, \$2.50.]

Report of the Secretary of the North Carolina Board of Health, on One Aspect of the Subject of Medical Education, as set forth in the Work of the Medical Examining Board.

Asiatic Cholera in North America. National Conference of State Boards of Health, held at St. Louis, October 13-15, 1884.

The Plaster Posterior Splint in the Treatment of Fractures of the Leg. By George W. Gay, M.D., Boston. Read at the Annual Meeting of the Massachusetts Medical Society, June 10, 1884.

Transactions of the Texas State Medical Association, for 1884.

Eight Meteorological Charts. Issued by the War Department.

Tracheotomy in Croup. By George W. Gay, M.D., Surgeon to the Boston City Hospital. [Reprint from the "Medical News,"]

Transactions of the Indiana State Medical Society, for 1884.

Transactions of the Colorado State Medical Society, for 1884.

Report of the National Board of Health, for 1883.

Correspondence.

LETTER FROM WASHINGTON.

The Opening of the Medical Schools.—The Advantages for Medical Students in Washington.—The New Secretary of the National Board of Health.—Personal Items.—The Rag Importation Order.—The Medical Association.—The Howard Medical College.

WASHINGTON, November 10, 1884.

THE medical schools have resumed their sessions, all of them with slightly increased classes. The new school, started as a "day" school, has a very few students, perhaps eight or ten, but it is hoped from this nucleus a great institution will be developed. There is an honest difference of opinion as to the time of day when lectures should be delivered, the advocates of the day lectures claiming the force of the established custom in other cities, and that the evening lectures were only instituted here because of the great preponderance of Government clerks among the medical students; on the other hand, the Georgetown and other colleges maintain that the evening, from five to half-past nine, is the best time for lectures, and the day the best time for study and dissections. The singular advantage that the city of Washington possesses to students is less understood than it should be, owing, perhaps, to the absence of a medical journal devoted to its interests. The unrivaled collection of medical books in the library of the Surgeon-General's office, the number and variety of the pathological specimens in the museum, the collection of materia medica in the Smithsonian Institution, the Naval Museum of Hygiene, and the herbarium of the Agricultural Department, together make a field for professional study quite out of the regular rut.

Dr. Hosmer A. Johnson, of Chicago, having resigned from that body, the National Board of Health recommended the appointment of Mr. W. P. Dunwoody to fill the vacancy, and as Colonel George E. Waring, Jr., the secretary, has recently resigned, he has been appointed secretary of the board. Mr. Dunwoody was for some years a clerk in the health office here, and, on the organization of the National Board of Health, was appointed its chief clerk, and subsequently its disbursing clerk. It can not be said that Mr. Dunwoody has ever particularly distinguished himself as a sanitary expert, but he is doubtless equal to Mr. Simon or the other lay members of the board; besides, the literature of the profession is an open book, and he can do as the late Artemas Ward did with the subject of the Cuban insurrection, he can "read Cuba up." However that

may be, it is thought that the redoubtable board will be infused with new life and vigor by the advent of Mr. Dunwoody upon the sanitary stage. The board failed to hold its annual meeting this summer. Under its rules, the executive committee has charge of the correspondence and other acts of the board.

Dr. Basil Norris, of the army, who has been stationed here for so many years as attending surgeon, has been ordered to California as Medical Director of the Department. Surgeon Norris has many warm friends both in and out of the army.

Dr. James F. Hartigan has been appointed a Lecturer on Diseases of Children, and Dr. John W. Bayne Professor of Clinical Surgery, at the Georgetown University—both excellent appointments.

It was flashed across from Paris a few days since that the ragpickers of the Faubourg St. Antoine were those first attacked by cholera, and this was coupled with the statement that the outbreak of the disease was due to imported rags. It will be remembered that our Government, acting on the advice of Surgeon-General Hamilton, suspended the importation of rags from Egypt during the existence of cholera there, and that more recently the order was renewed in view of the appearance of cholera in France. With singular short-sightedness Secretary Gresham modified the order so that it should apply to infected ports only. This had the practical effect of admitting all rags, because of the ease with which they could be transhipped from other ports. It was in vain that the Surgeon-General pointed out this loophole. Mr. Gresham was determined to favor his friends, and issued the order. One of the companies had gone to great expense in fitting up machinery for boiling the rags abroad before baling, and this method was satisfactory to both the Surgeon-General and the Board of Health of New Haven. A little backbone on the part of the Secretary would have forced the rag importers to cause all rags to be disinfected abroad or boiled before being baled, and thus all future trouble might have been avoided; but the ways of the ambitious politician are devious.

It is sincerely hoped that the authoritative statement of the tracing of the Parisian epidemic to imported rags will for ever put at rest such mischievous assertions as that iterated and reiterated by the ragmen, that "no epidemic disease has ever been traced to rags." Even so straightforward a journal as the "Boston Medical and Surgical Journal" has given currency to this assertion, and has been unable to see any wisdom in the governmental order. It is hoped that those eminent sanitarians, the publishers, have not furnished the editorial eye-glasses.

The Medical Association, which is the ethical body of the district, had under discussion at its last meeting the following amendment to its regulations, proposed by Dr. Robert Reyburn:

"Strike out the first paragraph of Section 19, and substitute the following:

"Members of this association shall be allowed to consult with all regular graduates, in good standing, who are not members of this association; provided such graduates are licentiates of the Medical Society of the District of Columbia."

The amendment was opposed by Dr. Lovejoy and Dr. Toner, and, after some discussion, was laid on the table. The effect of the amendment, if passed, would have been to admit to consultation privileges certain graduates of Howard Medical College who were not members of the association. It should be understood that the Howard Medical College is the college for freedmen, and that white men are admitted to the same classes. The fees are quite low, in consequence of the charitable character of the school, and there has been until lately some degree of prejudice against the non-African alumni.

Dr. Horatio R. Bigelow sailed for Europe last week, intending to be absent about two years.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.

Published by
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Edited by
FRANK F. POSTER, M. D.

NEW YORK, SATURDAY, NOVEMBER 22, 1884.

THE NEW YORK STATE MEDICAL ASSOCIATION.

THE first annual meeting of the New York State Medical Association, held in this city on Tuesday, Wednesday, and Thursday of this week, is a noteworthy event, from whatever standpoint it may be regarded. We prefer to look at it—as this and the succeeding annual meetings of the same body are certain to be looked at when the circumstances that led to the formation of the association have left as few traces of rancor elsewhere as they have in New York—as a most successful meeting for the interchange of views and experiences in the various branches of medical knowledge.

The sessions were well attended from all quarters of the State, and the preponderance of men who had reached middle life showed most unmistakably the interest that is felt in the success of the association. The younger element was by no means lacking, however, and the physicians of the city, whether members or not, were present in sufficient numbers to warrant the statement that the meeting was looked upon by them with a good deal of interest. Moreover, a number of eminent medical men from other States attended the meeting, having come to New York for the purpose.

Concerning the scientific work of the meeting, we can only say that the programme, which we have already published, was, in our opinion, one that we have never known excelled by an organization drawing its members from no greater territory, whether we consider the importance of the subjects presented or the standing of the men by whom they were handled; and that the programme was exceedingly well carried out. Indeed, not only were but very few of the papers set down read by title, but quite a number were read that had not been mentioned in the programme.

In this issue of the journal we publish several of the papers, together with a summary of the general work of the meeting, and we shall shortly publish a number of the other papers. Our readers will therefore be afforded an early opportunity of judging for themselves of the quality of the work done. For our own part, we regard it as admirable.

The New York State Medical Association enters with no faltering step upon a career which we look to see long and honorable. The spectacle of two societies representing the profession of the State need not continue to signify disagreement; we believe that it has already ceased to imply dissension. In this age, "the good men do lives after them," and the mantle of forgetfulness is speedily wrapped around manifestations of acrimony; we are persuaded, therefore, that the profession of the State as a whole are prepared to look upon the achievements of the new association with pride. The State of New

York is a large one, and we see no reason why each of its two societies should not do good work; perhaps, indeed, emulation may lead each one to higher purposes than either, if it occupied the field alone, would aim at.

THE ROYAL COLLEGES OF ENGLAND.

AT the late meeting of the General Medical Council a subject of the greatest importance was discussed, no less a matter than a scheme for uniting the College of Physicians and the College of Surgeons, and requiring students to pass a conjoint examination which should cover all the branches demanded by the separate bodies. We in America can never understand how jealously English medical men cling to those venerable institutions, how every tradition connected with them is tenderly kept alive, and how the idea of mutability is as far removed from their names as from that of the Bank of England. The very aspect of the gloomy old pile in Lincoln's-Inn Fields dispels all thoughts of change and decay; the busts of a long line of illustrious surgeons, which look down from its walls, seem to frown at every innovation.

To speak of one of the royal colleges is to suggest in a word one of the last strongholds of English conservatism. Can it be that this is threatened? It appears so. The Medical Council, by the way, has had a series of lively meetings. There was by no means perfect unanimity regarding the proposal to unite the two extremes of medicine and surgery, and some of the remarks of the distinguished members form spicy reading. The third licensing body, the Society of Apothecaries, which has long been regarded with aversion by its more dignified rivals, was calmly ignored by the Council.

The questions before the Council were as to whether the two colleges should unite their examinations, and as to whether, in so doing, the standard should be lowered. These questions were vigorously discussed, countless propositions and resolutions were offered, and finally it was voted to reserve the decision for a subsequent meeting. The subject of midwifery seemed to prove a *casus belli*; some members were for a special examination in that branch, while others were against it. We remark with surprise that several of the gentlemen appeared to favor a lowering of the standard in this department. We should be very sorry to see any such concession as this made. It is the boast of the two chief examining bodies that they endeavor to raise the student to their level, and not suit their examinations to his deficiencies. It is a curious but characteristic surgical argument against a thorough training in midwifery that many practitioners "do not need it." There is a great deal of useless matter "crammed" for the examinations in surgery, yet no such charge is brought against that branch. It is difficult for us to comprehend the inconsistency of some English examiners who cry down specialists, and yet recommend a special degree in obstetrics.

We are not in a position to sift the matter thoroughly; its salient points are the only ones that we, as foreigners, can consider intelligently. The profession of Great Britain are to be congratulated upon the interest which has been aroused in

regard to this important matter. That the discussion will be productive of good we are sure, although we should regard it as a great misfortune if the present standard of the London examinations was not preserved. The "conjoint scheme" will be a true reform if it clears away some of the dust of ages which covers the customs and traditions of the ancient colleges. We foresee another possible consequence of this new movement—the breaking down of that partition wall which now separates medicine from surgery, and the establishment of broader and more liberal ideas regarding the spheres of the physician and the surgeon. This will not be the work of a day, but the change is sure to come.

NEWS ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending November 18, 1884:

DISEASES.	Week ending Nov. 11.		Week ending Nov. 18.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid Fever.....	38	13	32	9
Scarlet Fever.....	46	9	49	12
Cerebro-spinal meningitis.....	3	2	8	8
Measles.....	102	13	83	12
Diphtheria.....	72	38	62	35

Yellow Fever in New York.—On Wednesday afternoon it was discovered that the steward of a vessel which reached this port from Costa Rica the day before was dying of yellow fever in a boarding-house in Spring Street. He died after having been taken to the Reception Hospital. The captain of the vessel is reported to have declared to the officials at the Quarantine Station that there was no sickness on board, but the sick man stated that he was attacked on the 8th inst.

A Crematory for New York.—The corner-stone of a crematory was laid at Mount Olivet Cemetery, Long Island, on Wednesday of this week.

Mount Sinai Hospital.—A reception was held at the hospital last Sunday, and the benefactors of the institution were enabled to see the many evidences of the good work it is doing.

Professor Virchow has been elected to the German Parliament.

A French Cholera Commission in Italy.—According to the "Union médicale," M. Jules Aronsson, professor of organic chemistry, is to take charge of a scientific mission to Italy, for the purpose of studying the etiology, the physiological chemistry, and the therapeutics of cholera.

The Death of Dr. Samuel A. Fisk, of Northampton, Mass., took place last Sunday. Dr. Fisk was a prominent member of the Massachusetts Medical Society. He had reached the age of sixty-three years.

Society Meetings for the Coming Week:

MONDAY, November 24th: Medical Society of the County of New York.

TUESDAY, November 25th: New York Dermatological Society; New York Surgical Society; Boston Society of Medical Sciences (private); Buffalo Obstetrical Society (private—a paper on "The Hot Vaginal Douche in Pelvic Disease," by Dr. Fell).

WEDNESDAY, November 26th: New York Pathological Society; American Microscopical Society of the City of New York;

Auburn City, N. Y., Medical Association; Berkshire, Mass., District Medical Society; Cumberland County, Me., Medical Society; New York Society for the Relief of the Widows and Orphans of Medical Men (annual).

THURSDAY, November 27th: New York Academy of Medicine (Section in Obstetrics and Diseases of Women); Roxbury, Mass., Society for Medical Improvement (private).

FRIDAY, November 28th: Yorkville Medical Association; New York Society of German Physicians; New York Clinical Society (private).

OBITUARY NOTES.

Professor Julius Cohnheim.—On the 14th of August, as has already been briefly stated in this journal, Julius Cohnheim died in Leipsic. In him not only Germany, but the whole world of science, has lost one of her most prominent and original thinkers, and those, to whom it was given to know him personally, mourn the loss of a dear and honored friend.

Cohnheim made his first entrance into the scientific world, while an assistant to Virchow, by his investigations on the nerves of the cornea. In the necessary experiments he originated that method of chloride-of-gold staining which has since been so widely employed. At this period, too, he made those discoveries, connected with the emigration of the white-blood globules in inflammation, which at once placed his name in the foremost rank among pathologists. It is an instance of his application and enthusiasm for his work that nearly all the observations which culminated in the discovery of the processes of inflammation were made, as he once told me, before seven o'clock in the morning, the rest of the day being busily occupied in the routine of teaching and making post-mortem examinations at the Pathological Institute. In regard to this, the great discovery of his life—a discovery which had been unceasingly sought after by physicians of all nations, and at all times, since the earliest dawn of medical science—he never failed to show his characteristic modesty, nor ever neglected, in his lectures or writings, to point out that Waller, in England, had forestalled him with the same observations, but that they had been, unfortunately, totally ignored and forgotten by the world. Only after he had published his own researches did he become aware of Waller's publication in the "Philosophical Magazine" for 1846 of similar experiments and results. In his researches on inflammation he used that method of direct observation, in transparent portions of the living body, of pathological processes in the very act of their occurrence, which he subsequently developed in his investigations on thrombosis and embolism, on tuberculosis, and other subjects.

Soon after this, his reputation being now firmly established, he was called to a professorship in Kiel. Here he made his well-known researches on thrombosis and embolism, besides completing other minor works.

In 1872 he received an appointment at Breslau, where a larger sphere of usefulness was opened to him, and in 1878 he followed a call to Leipsic. Here he enjoyed increased facilities for work and for intercourse with kindred spirits, and with this university he was connected up to the time of his death. In Breslau and Leipsic many students, attracted by his fame, sought, in his private laboratory, the advantages of working under his guidance and advice, and it is from this period of his life that so many researches bearing the impress of his genius have appeared.

As a pathologist, Cohnheim was a thorough believer in the physiological method of study, and constantly sought to keep before the minds of his pupils the fact that pathology was but morbid physiology. His great work, in two volumes, "Lectures on General Pathology," of which he completed a second edition

shortly before his death, is a thorough exposition of his views and methods of thought. In it physiological pathology has been developed to its widest limits, and the general interdependence of nearly all pathological processes clearly pointed out. It is a masterly and suggestive work, full of sound thought and lucid reasoning, presented in a simple and interesting style of diction. Its influence on the rising generation of pathologists in Germany has been great, and it is much to be regretted that no translator has yet given it to the English-reading public.

In his scientific work he was distinguished by a singular modesty and candor. Always ready to listen to objections, he gladly admitted mistakes when they were pointed out to him. Ever eager for truth, he would often question results whenever, at any time, he suspected his experiments to have been liable to error. Thus his first investigations on tuberculosis, made in the Pathological Institute in Berlin together with Fränkel, led him to believe that the implantation in rabbits and Guinea-pigs of indifferent materials—as pieces of cork or glass, pellets of paper, etc.—had as much effect in causing tuberculosis as inoculation with tubercular material itself, and he published his opinion accordingly. He was afterward led to doubt the validity of his results, surmising that in his experiments an accidental inoculation with tubercular virus might possibly have occurred. He therefore repeated them in Kiel and Breslau, with increased precautions, and under more favorable hygienic surroundings for the rabbits, and found then that tuberculosis resulted only when actual tubercular material had been inoculated. He at once published these now well-known experiments, calling attention to his former errors. It was he who introduced the method of inoculating tubercular virus into the anterior chamber of the eye, where all changes can without difficulty be observed. He found that a period of incubation lasting fourteen to twenty-one days elapsed before miliary tubercles appeared upon the iris, this being followed later by a tubercular invasion of the body generally. This discovery placed the disease in question on as firm a basis regarding its infectious nature as did Koch's later one of the bacillus—a final but not absolutely necessary link in the chain of proof.

He was always inclined to criticise kindly the works of others, and though, if necessary, he emphatically pronounced an opposite view, he yet strove to recognize their good points. In his earlier writings he replied to carping criticisms with a fine sarcasm, which generally was peculiarly ludicrous from its unexpectedness and from its point. In later years, however, he but rarely noticed personal allusions, regarding such attacks with amused indifference.

His was also to an eminent degree that rare talent, which so few possess, of being able to enter fully into the thoughts and plans of others. This faculty led him to generally allow his pupils to pursue such researches as they were themselves most interested in, while he assisted with his advice. In this way he strove to elicit the best thoughts from each, giving to every one that work for which he seemed by inclination and previous study most fitted.

His patience was remarkable. He would listen with great attention to the crudest suggestions, and take infinite pains in explaining his objections, seeking at the same time to find some good and useful points in everything submitted to him. This combination of modesty with patience and genuine kindness made him singularly approachable and companionable. He never made one uncomfortably conscious of his learning and experience, nor willingly caused any one to feel his own ignorance. Indeed, he was so willing to receive knowledge or suggestions from all, and so readily submitted to contradiction and argument, that it sometimes seemed to me as though he might be the pupil, and the pupil the master!

As a teacher his method was perfect. Such clearness, such order, such consecutiveness of thought, and such a grasp of the subject as he showed in his lectures, can hardly be excelled. Those who heard him felt as though they were sitting at the fountain-head itself, not listening to the mere oral repetition of some text-book, but gaining the results of the ripe experience and earnest thought of an original and successful investigator.

Personally he was a most lovable man, inspiring feelings of true affection and esteem in the hearts of all who knew him. His temper, always of a quiet cheerfulness, had also a vein of pleasant humor running through it, and even in spite of great suffering, and in spite of the knowledge of a not very distant end, this temper never changed. He also never complained, rarely spoke of himself, and never of the final issue of his illness, for more than fifteen years he had suffered from gout. Gouty nephritis manifested itself early in the disease, and it was from this and its cardiac complications that he finally died. He was a true philosopher. Once fully knowing the inevitable outcome of his malady, he laid the thought of death aside, so far as any man ever can, and steadily pursued the work that each day brought him.

As a friend and pleasant companion, we who saw him at his home, in the circle of his family, can best appreciate him. Here, aided by a most devoted and amiable wife, he dispensed a gracious and kindly hospitality that charmed all who came within its influence.

Cohnheim was but forty-five years of age when he died. Thus stricken down in the best years of his life, when his powers, already so great, seemed to be ripening to still higher promise, he leaves behind him in the annals of science a record which will for ever keep his name remembered and honored, and in the hearts of his friends and pupils a sweet and dear remembrance.

WALTER MENDELSON.

Proceedings of Societies.

NEW YORK STATE MEDICAL ASSOCIATION.

First Annual Meeting, held in New York, Tuesday, Wednesday, and Thursday, November 18, 19, and 20, 1884.

The President, Dr. H. D. DIDAMA, of Syracuse, in the Chair.

Tuesday's Proceedings.

THE meeting was called to order at the Murray Hill Hotel at 10 o'clock A. M.

The President's Address.—The President, in his annual address, dwelt upon the subjects of progress and conservatism in medicine. The address will be published in full hereafter.

A Committee on Scientific Communications was appointed by the President, consisting of Dr. ARNOLD, Dr. CLARK, Dr. GILLIS, Dr. AVERY, and Dr. CANNON.

The Annual Report of the Council was read by the Secretary.

Delegates from Other States were then introduced and invited to participate in the scientific proceedings, after which the Treasurer, Dr. HINTON, read his report, by which it appeared that \$1,686 had been received, and \$1,002 disbursed.

The Report of the Special Committee on the Organization of District Associations was read by Dr. GOWLEY, and, after some discussion as to possible relations with county medical societies, was unanimously adopted.

An Auditing Committee was appointed by the President, consisting of Dr. PURPLE, Dr. WYCKOFF, and Dr. ORTON.

The Address in Surgery was then read by Dr. E. M. MOORE, of Rochester. Dr. Moore presented some facts in connection with the transfusion of blood, and remarked that the subject, looked upon from any point of view, was in a state of uncertainty. Any surgical procedure, to be widely practiced, must be simple and easily executed, and, if possible, we should be able to extemporize means for its performance if the necessary apparatus was not at hand. He briefly referred to the history of transfusion. As to the use of defibrinated blood, he agreed to the statement which had been made, that defibrinated blood should not be considered as blood. Fresh blood being employed, in order to avoid coagulation the transition should be short, and yet the injection should be neither too rapid nor too forcible. Most operators extended the injection over two or three minutes, in order to prevent too violent shock, but within this time blood would coagulate. Dr. Moore then described an apparatus of his own invention, by which he thought the greater difficulties and dangers of transfusion were overcome. It consisted of a soft-rubber cylinder, to contain the blood, to which a round-pointed needle could be attached for introduction into the vein of the recipient. When the desired amount of blood had been introduced directly from the donor's vein into the rubber cylinder, the walls of the latter were rolled up and compressed by the operator's hand, which forced the contents through the hollow needle into the patient's vein with the desired rapidity. In several cases of transfusion performed by Dr. Moore, the entire time occupied was less than one minute. The influx could be immediately cut off by pushing upon the head of a piston fitting into the hollow needle. The shape of the needle would prevent a coagulum forming on its surface. It could be left in the vein of the recipient, if it was desired to interrupt the operation and begin again, the reservoir and its attachments being cleansed in the mean time. The several patients upon whom Dr. Moore had employed this apparatus for transfusion had been benefited, and all but one of them permanently.

The address was discussed by Dr. TOWNSEND, who confirmed Dr. Moore's remarks concerning one of the cases in which transfusion was performed, which he had seen with him.

The New York County Medical Association.—Dr. WILLIAM DETMOLD, President of the New York County Medical Association, was introduced to the meeting, and made some remarks upon the work which had been done by that association during the past year. His remarks and the titles of the papers read before the New York County Medical Association for the year were ordered upon the minutes.

A recess of ten minutes was then taken, during which the members of the several districts organized, appointing officers for their respective districts for the coming year, and naming a date for an annual meeting.

Dr. J. W. S. GOULEY, of New York, was chosen Member at Large of the Nominating Committee.

Transfusion.—At the afternoon session Dr. J. C. HUTCHISON, of Brooklyn, read a paper on this subject. It will be published in a future issue of this journal.

Dr. ROCHESTER, of Buffalo, discussed the paper, and referred to some cases which went to show that a much smaller quantity of blood was required to produce marked beneficial effects than of saline solutions, and said that there must be something more than the mere dynamic power in the fluid to produce the effect. In cases of cholera in which the patients could be aroused from a moribund condition by the injections of the salines, this might often be of great advantage even if it was but temporary, as it would enable the patient to make a will and attend to other important affairs.

The Duration of Contagiousness after Acute Infectious Diseases was the title of a paper read by Dr. ALFRED L. CAR-

ROLL, of Richmond County. It will be published in full in this journal.

A paper entitled "The Therapeutics of Diphtheria," by Dr. J. W. MOORE, of Albany County, and another entitled "Notes on Dislocation of the Hip," by Dr. FREDERICK HYDE, of Cortland County, were read by title.

Chronic Intestinal Catarrh.—Dr. JOHN S. JAMISON, of Steuben County, read a paper on this subject. He first described the anatomy of the intestinal tract, mentioned old pathological conditions the presence of which might be one of the causes of intestinal catarrh, spoke of the important rôle played by coarse and undigested foods in the etiology of the affection, and also of other inproprieties in diet; likewise of exposure in damp weather, chemical and mechanical irritants, and idiosyncrasy as indirect causes, of disease of the stomach, liver, pancreas, etc. Before the reading of the paper was finished, the President announced that, owing to the large number of papers to be read, the society would have to adhere to the rule to restrict the reading of each paper to thirty minutes.

Progress in Materia Medica and Therapeutics.—Dr. E. R. SQUIBB, of Brooklyn, read a paper with this title. [See page 572.]

The Management of Criminal Abortion was the title of the next paper, by Dr. W. H. ROBB, of Montgomery County. Dr. Robb restricted his remarks to those cases in which gestation was interrupted before the fifth month, and considered the subject under four heads: 1. The best method of controlling hemorrhage. 2. The safest way of removing the entire ovum. 3. The prevention of septiciæmia. 4. The restoration of the woman to health. The means for controlling hemorrhage were both local and constitutional. The constitutional means were the use of ergot and that of digitalis. In extreme cases the drugs should be administered hypodermically, and it might be necessary to give brandy and ether in the same way. He would advise the use of ergot as early as possible, either to control hemorrhage or to produce expulsion of the uterine contents, and he would continue its use until the uterus had contracted after its evacuation. In regard to local measures, he would rely mainly on hot water or ice, the tampon, and the tent. If hot water failed, if there was no decomposition of the ovum, and if the cervix was not sufficiently dilated to admit of the introduction of the finger, he would introduce a tampon, and use carbolized water as a disinfectant. The use of the tent should be preceded by an injection of carbolized water through a rubber tube with openings so directed as to prevent the injection of air into the Fallopian tubes or the uterine sinuses. The uterus should be emptied of all foreign matters as early as possible. For removing the ovum, no instrument could take the place of the finger, if the cervix would admit of its introduction. The artificial evacuation of the uterus should be followed by the use of disinfectants in the form of injections. For restoring the woman to health, hygienic conditions should be attended to and restoration of the general health should be aimed at, pelvic and nervous troubles being managed as they arose. In conclusion, he urged the necessity of physicians using all their influence to discountenance the work of abortionists.

Dr. ELY VAN DE WARKER, of Syracuse, had seen no benefit follow the use of ergot given for the purposes mentioned by the author, and he thought it was wasting valuable time to wait for its action to control hemorrhage. For some time past he had not resorted to the use of tents for dilating the uterine canal; he had succeeded well with the uterine dilator, and he preferred to use it, as it enabled him to introduce his finger.

Dr. MOSES C. WHITE, of New Haven, said that the action of ergot at the third month was not to expel the contents of the uterus, but to cause the blood-vessels of the organ to contract,

thus tending to prevent abortion: hence the use of the drug as a preventive of that accident.

Dr. R. H. SABIN, of West Troy, referred to a case in which the use of the tampon for the control of hæmorrhage after the expulsion of a fibroid seemed to have been the cause of rupture of the uterus, and of the consequent death of the woman.

Chronic Mercurial Poisoning was the title of the next paper, by Dr. CHARLES BULKLEY, of Monroe County, who related a case in which the symptoms suggested to him arsenical poisoning, but disappeared with the temporary removal of a set of false teeth from the mouth, and returned when the use of the teeth was resumed. A like sequence of events had been observed in other cases. Chemical analysis of the teeth showed that the India-rubber base contained mercury, and it was concluded that that had been the cause of the symptoms. He therefore advised against the use of rubber colored with mercury in the formation of plates.

A Case of Acute Lead Poisoning resulting fatally was the title of the next paper, by Dr. SABIN. The patient was a painter, and the symptoms of lead poisoning were severe from the beginning of his last illness, taking on an algid form and leading shortly to death.

Errors of Refraction; the Importance of their Recognition and Correction in Early Life.—Dr. H. E. MITCHELL, of Rensselaer County, read a paper with this title. He began with a brief description of some points in the anatomy of the eye, and of the hardening of the sclera which took place as the child grew older, and directed attention to the mechanism of emmetropia, myopia, hypermetropia, and astigmatism, and to the necessity of correcting the abnormal conditions early in life. The general practitioner could determine, by means of a set of test-types and the optometer, whether or not it was necessary to send a patient to an oculist. The author then described the optometer.

The Dietetic Treatment of Dyspepsia.—Dr. AUSTIN FLINT, of New York, read a paper with this title. [See page 566.]

Double Synchronous Amputations was the title of the next paper, read by Dr. U. C. LYNDE, of Erie County. The author considered the subject from a statistical point of view, most of the cases which he had collected having been those of amputations performed in consequence of railway injuries.

The Functions of the Auricles was the title of a second paper by Dr. LYNDE. He maintained that the auricles were entirely passive, being only the termination of the veins, serving as reservoirs for the blood before it entered the ventricles. Some of his reasons for asserting that the auricles did not contract were: there was no necessity for their contraction; their walls were quite thin; they were covered by a deposit of fat; there were no valves in the large veins; in disease the walls of the auricles became very thin and largely distended, and would rupture if they contracted.

Dr. AUSTIN FLINT, Jr., could not accept the view put forth by Dr. Lynde, that the auricles did not contract, as experiments made by himself and by most physiologists had demonstrated their actual contraction. These experiments had been repeated many times, and there could be no doubt of the fact he had stated. Again, the auricular walls contained muscular fibers, like those of the ventricles, and everybody would acknowledge that the ventricles contracted. The results of experiments were also opposed to the view that the auricles were emptied by a suction force as a result of ventricular contraction.

Dr. MOORE referred to experiments by himself and Dr. Bennett, performed in 1838, which, as well as experiments by others, he thought, positively proved that the auricles contracted.

Dr. FLINT, Sr., said that, in cases of free communication, in consequence of valvular incompetency, between the right ven-

tricle and the right auricle, a jugular pulse was to be noticed with each contraction—that of the ventricle and that of the auricle—the two jugular pulses taking place synchronously with the ventricular and the auricular contraction, respectively. A presystolic murmur, evidently due to active contraction of the auricular walls, afforded further evidence of the correctness of this view.

The subject was further discussed by Dr. Ross, and Dr. LYNDE closed the discussion. The latter said that he had been able to demonstrate the active contraction of the ventricle on introducing a cannula, but that he had always failed to get any evidence of active contraction of the auricle.

On the Use of the Aspirator in Hydrothorax.—Dr. E. D. FERGUSON, of Rensselaer County, read a paper with this title, the object of which was to show that danger attended the use of the aspirator in these cases, especially when the amount of liquid withdrawn was not limited. The aspirator should never be used to completely empty a living, non-retracting cavity. Eight ounces would often be a sufficient amount of fluid to withdraw at a single operation, and certainly, if difficulty of respiration or other symptoms following the withdrawal of fluid from the chest occurred, the operation should be stopped immediately.

A New Procedure in Paracentesis Thoracis was the title of the next paper, read by Dr. THOMAS F. ROCHESTER, of Buffalo. [See page 571.]

The two papers being before the meeting for discussion, Dr. FLINT, Sr., said that he had listened with interest to both of them. He thought that Dr. Ferguson had perhaps rather overdrawn the harm done with the aspirator, but the precaution he had suggested in its use seemed appropriate. He had been particularly struck with the comparison made between completely emptying the pleural cavity of fluid and the entire evacuation of the distended bladder, as, some years ago, he had witnessed a disastrous result in a case of the latter kind.

Dr. E. M. MOORE was of the opinion that Dr. Ferguson had underestimated the benefits to be derived from the aspirator in overestimating the possible harm it might do. He thought Dr. Ferguson had made a good point in speaking of the danger of removing too much of the fluid from the pleural cavity at one time. The instrument, however, was of great value when employed with this precaution in view, and its use should be repeated as often as might be necessary. He had in certain cases resorted to the use of drainage-tubes, but had given them up, as being much inferior to the aspirator. But in certain other portions of the body, as in the abdomen, where the walls would readily collapse on withdrawing the whole of a collection of fluid, the precaution to withdraw only a portion did not apply. He had also seen an unfortunate result, after emptying an over-distended bladder, from hæmorrhage.

Dr. ROCHESTER said, with regard to Dr. Ferguson's paper, that most writers at present spoke of the danger of completely emptying the pleural cavity at one operation. As to the danger of hæmorrhage from blood-vessels of the pleura, he had also known serious hæmorrhage from the lung occur after paracentesis thoracis. Sometimes it happened that, after once withdrawing eight or ten ounces of the pleuritic fluid, the patient went on to complete recovery. In other cases the operation had to be repeated. He always immediately ceased to withdraw fluid if the patient began to complain.

Dr. FERGUSON said he had wished to emphasize the importance of withdrawing only a small amount of fluid, without waiting for the patient to complain. In some cases it became necessary to use a drainage-tube, and he had no doubt that loss of life had been avoided by this means in many cases.

Dr. W. C. B. FIELDFIELD, of Boston, called attention to the fact

that Dieulafoy, some years ago, when he first introduced his aspirator, pointed out the necessity of withdrawing only a small amount of the fluid from the pleural cavity at each operation.

The PRESIDENT asked, with regard to Dr. Moore's statement, that a large majority of patients with pleurisy got well, how it was that so many persons had pyothorax.

Dr. FLINT, Sr., had practiced the method mentioned in Dr. Rochester's paper in a number of instances.

Wednesday's Proceedings.

Sectional Work.—Dr. GOULEY reported that the question of dividing the meeting into sections had been considered by the special committee, which, while it had drafted a plan, was not prepared to present it for action at the present time. The number of papers was so great, however, that it indicated the necessity of a division into at least two sections at future meetings.

The Association's Library.—Dr. GOULEY offered certain resolutions looking to the establishment of a library for the Association, which should be as a city home for members when they visited New York. The resolutions were adopted.

In behalf of the Association, the PRESIDENT accepted of an original copy of the Code of Ethics of the American Medical Association, presented by Dr. Smith, of Philadelphia.

On motion of Dr. CARROLL, presented by the Secretary, it was voted that members of the Association might append to their names, in medical publications, the initials F. S. M. A.

Diarrhea resulting from Disease of the Pancreas was the title of a paper read by Dr. C. S. ALLEN. The author gave the history of a case of diarrhea in an aged river-captain, the stools containing adipose matter *en masse*, and also covering the consistent part a quarter to an eighth of an inch in thickness. He had therefore called it adipose diarrhea. Before having a passage, the patient suffered from pain in the region of the umbilicus. The pain ceased after the stool. There were three or four movements daily. There was no fever, the extremities were cold, the pulse was irregular, the urine was of a dark color and variable in quantity, and the muscles were flabby. The prognosis was considered unfavorable. The treatment had consisted principally in the administration of pepsin, pancreatin, opium, ipecac, and camphor. After some days the patient was able to go out, the diopse matter disappeared from his stools, and the pain ceased. Some weeks later the patient became comatose, but a few ounces of urine could be withdrawn from the bladder, and it contained a large amount of sugar and albumin, also casts and broken-down blood corpuscles. The patient died, but, unfortunately, an autopsy could not be obtained. The author cited from literature two cases of diarrhea resembling his case. It was supposed that they had resulted from disease of the pancreas.

The Address in Obstetrics and Gynecology was then read by Dr. T. GAILLARD THOMAS, of New York. [See page 561.]

At the opening of the afternoon session, a paper by Dr. B. L. HOVEY, of Monroe County, entitled "The Practice of Medicine Forty Years Ago, with Comparative Position at Present," was read by title.

On Venesection in the Convulsions of Pregnant and Parturient Women.—Dr. DARWIN COLVIN, of Wayne County, read a paper with this title, based upon his practice and that of his father, extending over a large number of years and including a great number of cases. It had always been his father's practice in puerperal convulsions, actual or threatened, to bleed the patient once or more, according to the urgency of the case. The author recited numerous cases in which all other means had failed except the abstraction of blood, varying in quantity at a single operation from sixteen to thirty ounces. The use of

chloroform had not been neglected. In no case had any unfavorable result followed venesection, and in no instance had a patient in their practice died from puerperal convulsions. His conclusions were: The physician should always see the patient two months before the expected delivery, and carefully examine the urine from time to time. If it contained much albumin, or the woman complained of headache or had oedema, venesection should be resorted to; she should be warned against all food likely to produce indigestion; the bowels should be kept in a free condition; if, toward the time of parturition, there was headache, oedema, or albuminuria, one should not hesitate to bleed; morphine might be a useful adjunct.

Dr. E. M. MOORE thought the paper should not be passed by without some discussion. Doubtless venesection in cases of convulsions during pregnancy would suspend this condition; it would also suspend neuralgia. During this suspension the woman could be delivered, there would be time for a cathartic to act, and it was the movement of the bowels which would cure the albuminuria or relieve the system of the poison. He preferred to gain time by suspension of the convulsions by the use of ether. Its administration should be kept up constantly even for a number of hours, until the cathartic had had time to act.

Dr. O. G. POMEROY agreed with Dr. Moore. He also knew of the beneficial action of venesection. He mentioned a marked instance in which convulsions were suspended a number of hours by the constant inhalation of chloroform, but returned when its administration was interrupted.

Dr. B. L. HOVEY related two cases of puerperal eclampsia, and said that he believed in all that Dr. Colvin and Dr. Moore had said, and yet he believed also that emptying the uterus was the essential and primary measure.

Dr. THAYER, of Brooklyn, directed attention to the use of veratrum viride in large doses, and said that, while the treatment was not new, he did not think it was so generally practiced as was desirable, or as was necessary to determine its exact value.

Dr. COLVIN said that in his cases he had employed cathartics and the other measures which had been mentioned, but the chief point to which he would have called attention seemed to have been overlooked, namely, the condition of the pulse, which he sought to make normal, and had so thoroughly succeeded in doing by venesection.

Dr. CROXON, of Buffalo, wished to thank Dr. Colvin much for having spoken in favor of the almost entirely neglected method of treating these cases by venesection. The cases in which the method had been employed by physicians of many years ago doubtless were of a similar kind to those which were treated at the present day by other measures, and he felt sure that much good had been accomplished by bloodletting and other measures mentioned this evening, including cathartics, but venesection had been of late largely replaced by other methods.

Fracture of the Base of the Acetabulum was the title of the next paper, read by Dr. C. C. F. GAY, of Erie County. [The paper will be published in full hereafter.]

The paper was discussed by Dr. COLVIN, Dr. CROXON, and Dr. BROWN, each of whom recited a case in which there had been doubt as to the diagnosis, there being some injury at the hip from a fall, but the paper read by Dr. Gay seemed to make it quite certain, they thought, that there must have been fracture of the base of the acetabulum.

A Case of Tubal Pregnancy of Fourteen Years' Standing, at Full Term; Autopsy.—Dr. J. G. ORTON, of Broome County, read the history of the case. The patient first consulted him in October, 1882, suffering from considerable pain in the region of the rectum. She had come from another State,

where she had gone through a long period of sickness, but she had regained her weight, health, and color. He found the uterus in place. By rectal examination he found, four inches above the anus, near Douglas's *cul-de-sac*, a hole half an inch in diameter; through this hole he felt a hard, movable body, and, on extracting it with the forceps, it was found to be the right tibia of a full-grown fœtus. A considerable amount of yellow oily fluid escaped. The next day he succeeded in removing a considerable portion of the spinal column, and on every other day for several days he continued to remove a portion of the bones. About one hundred in all were extracted in this manner. They were free of muscle and tendon. The hole in the rectal walls had been dilated to two inches. Her friends objected to anæsthesia, and the pain was too great to admit of removing all the bones at a single sitting. After a hundred of them had been removed, the patient was seized with an attack of severe diarrhœa, which, with her previous feeble health, resulted fatally in February, 1883. At the autopsy, ulcers and inflammation were found in the intestine, and the liver was fatty and somewhat broken down. On the right side of the median line, extending from the brim of the pelvis well down into Douglas's pouch, was a sacculated tumor, firmly adherent to the rectum, into which the rectal opening extended; it was attached to the intestines by recent peritoneal inflammation. The tumor consisted of the Fallopian tube, which was largely distended, but it in no wise involved the uterus or the ovaries. Within the tumor the remaining bones of the fœtus were found.

Dr. I. E. TAYLOR, of New York, referred to the case of a woman who died in Bellevue Hospital, immediately after he had been called to see her, and it was found that a hemorrhage had taken place from a vessel of the Fallopian tube, there being a tubal pregnancy of eight and a half months' duration. The specimen could be seen in the Wood Museum.

A Case of Tubal Pregnancy considered in Relation to Rupture of the Tube; Diagnosis and Treatment.—Dr. NATHAN BOZEMAN, of New York, then read a paper with this title. It will be published in full hereafter.

Dr. ARNOLD called attention to the fact that there was in the museum of the Albany Medical College a specimen of encysted fœtus which had been carried by a woman a great many years.

Dr. ROSS mentioned a case he had seen with Dr. Wey and two other gentlemen, in which the woman died about three months after the rupture of the sac of an extra-uterine pregnancy, and in which a very similar condition was found to that described by the author of the paper.

Dr. ROBERT NEWMAN, of New York, thought that tubal pregnancy was not so rare a condition as was generally supposed, and he thought Dr. Bozeman had done no more than justice in giving great praise to Dr. Rogers for the valuable suggestions which he had given the profession on this subject. Dr. Newman referred to a case or two of tubal pregnancy the histories of which had come to his knowledge.

After some further discussion with regard to the use of electricity in these cases, Dr. BOZEMAN referred to a case in which he lately had Dr. Rockwell apply electricity on four different occasions, with the apparent effect of killing the fœtus within the Fallopian tube. The history of the case, however, was not sufficiently complete to warrant its incorporation in the paper.

Dr. E. R. SQUIBB said there was a specimen of extra-uterine pregnancy in the museum of the Jefferson Medical College, the cyst having been carried by a negress probably as long as twenty years.

Hydrochlorate of Cocaine as an Anæsthetic in Ophthalmic Surgery.—Dr. C. S. BULL, of New York, read a paper on this subject. He directed attention to the recent introduction of the drug as an anæsthetic in operations upon the eye, and

divided his remarks into those relating to experiments as to the anæsthetic effects of the drug on the cornea and those regarding its action on the conjunctiva; experiments on the pupils; and experiments on accommodation. 1. The effects of the drug in producing anæsthesia of the cornea and conjunctiva were complete and positive. 2. The indirect effect of cocaine was much slower than that of atropine, and disappeared more rapidly. 3. The action on the accommodation was, to his mind, still unsettled, but he could say that the range of accommodation was shortened. The effect was less decided and more transient upon the ciliary muscle than upon the iris. In no case was complete paralysis of accommodation produced. He believed the drug was absorbed into the deeper tissues, allowing of operations upon them, but the effect here was slower and less marked than upon the cornea. Numerous illustrative cases of the foregoing points were given.

Dr. MITCHELL, of Rensselaer County, thought that in hydrochlorate of cocaine he had an anæsthetic which was of the greatest value, especially to the ophthalmologist. The value of such an agent in the treatment of diseases of the eye, in children particularly, could not be overestimated. He had previously been in the habit of using in these cases the bromide of ethyl, which had given great satisfaction, and in the small quantity required it had never done any harm.

Dr. E. R. SQUIBB had received a letter from Dr. Noyes before the one which Dr. Noyes had sent to the "Medical Record" had been published, and he immediately sent some of the hydrochlorate of cocaine to Dr. Bull and another gentleman. Dr. Bull was probably the first man in this city to employ it to produce anæsthesia of the cornea. Dr. Squibb then stated that it was very difficult to manufacture the drug, that all that was for sale in this country had been obtained from Europe, and that druggists had been unable to get a sufficient supply from any source since its anæsthetic properties had been made known to the profession. He was at present at work trying to make it. At best, it was rather dear, but at the price formerly demanded by the European manufacturers it was cheaper than ether as an anæsthetic in operations upon the eye, as so small a quantity was required.

Report of a Case of Dislocation of the First Phalanx of the Thumb forward.—In the evening session, Dr. FREDERICK W. PUTNAM, of Broome County, read a paper with this title, in which he gave the details of an ingenious method of reduction by manipulation which he had made use of.

Insanity: Preventive Measures.—This was the title of the next paper, read by Dr. JOHN P. GRAY, of Oneida County. The paper was largely a strenuous appeal for an energetic enforcement of like preventive measures in the case of insanity as were daily carried into effect by boards of health in regard to bodily diseases; for, in view of the grave nature of mental disease, the reader considered its prevention equally important to the community as that of the diseases against which sanitary regulations were now directed. Attention was pointedly directed to the close relation between bodily and mental health, and to the consequent necessity of taking all pains to so direct the physical as well as the mental training of the young as to give them the best attainable vigor of development. Among the most important anticipatory measures was the early recognition of the condition of the brain and nerves. In cases of depression we must recognize the absolute necessity of restoring and sustaining the energies by rest and nutritious food. Instead of advising travel and varied scenes, etc., attention should be directed to the use of narcotics and hypnotics to quiet the system. Patients were more or less sleepless, with varying appetite, and were not inclined to social life and amusement. The treatment was generally that which would give comfort and sleep. This class of

remedies, we must admit, while giving temporary comfort, at the same time were very apt to disorder nutrition and assimilation to such a degree as to cause more harm than good in the end. The prevention here came in, in resisting the plea for sedatives, and substituting food and rest. There were few practitioners who could not recall instances in which mistaken treatment, or no treatment, had carried the patient into hypochondria and melancholia. Many such cases had resulted unexpectedly, both to the physician and to the family, in acute mania. Illustrative cases were then cited by the reader.

A paper entitled "Cerebral Epilepsy," by Dr. C. F. MACDONALD, of Cayuga County, was then read by title.

Excision of the Knee in preference to Amputation in certain Deformities of the Leg.—Dr. STEPHEN SMITH, of New York, read a paper with this title. There was a certain class of cases, he said, in which the question of excision at the knee, or amputation at or below that point, was to be determined. They were those cases in which the leg was rendered useless for locomotion; closely allied to those cases of deformity and displacement in which there was chronic inflammation, and the weight of the body could not be borne on the limb. The solution of the question would depend upon two points: the comparative safety of the two operations and the comparative usefulness of a stump after an amputation at the knee joint, and at a point immediately above or below that point. Out of fourteen cases of partial excision, but two patients died, which was a mortality of only two per cent. Amputation at the knee joint for chronic affections, according to the latest authorities, gave a mortality of twenty-two per cent., showing a difference of eight per cent. in favor of excision. In a large collection of cases, amputation below the knee gave a mortality of thirty-four per cent., and amputation above the knee a mortality of sixty-three per cent. Although these figures showed that excision was by far the less dangerous, for purposes of comparison he would place them on the same footing. Perhaps the greatest weight of authority on the question had been furnished by the late Dr. Hudson, of this city, who was employed by the Government for several years. Much as he favored artificial limbs, he always regarded an ankylosed knee as more serviceable than a stump to which an artificial limb might be adjusted. In the light of these facts, we might formulate conclusions in regard to these operations as follows: That excision at the knee joint was quite as safe as amputation above or below that joint; that excision of the knee joint was to be preferred to amputation, by which the leg was rendered useless.

Dr. S. W. GROSS, of Philadelphia, took it that excision of the knee joint was not the proper operation in all cases of deformity of the knee; for instance, in cases of ossification or synostosis of the joint he saw no necessity of resorting to excision at all. In such cases it had been his practice, and that of his father, the late Professor Samuel D. Gross, to make an incision across the knee, and break up the osseous union with a chisel. Then the patella could be separated from its adhesion to the femur by force applied to it through a towel interposed. Then, on account of the danger of rupturing the popliteal artery, it was not safe to attempt to straighten the limb entirely at once, but it was best to bring the foot down only so far as was necessary to make the toes touch the floor—the heel, he thought, should swing about an inch above the floor. Even this it was safer to accomplish gradually, at several operations, the patient being anesthetized each time. This operation, he thought, should be more widely practiced in preference to excision, as had been taught by the late Professor Gross, in his "Surgery." In regard to the statistics brought forward by the reader of the paper, he would say that they had been materially changed within the last five or six years, and no surgeon who resorted

to antiseptic precautions would expect to have a mortality of more than three or four per cent. after amputation of the leg.

Dr. E. M. MOORE, of Rochester, had, perhaps, had an unusual timidity with reference to any operation upon the bone of the thigh. He felt that he had been too timid in this matter, and a case had presented itself to him last year, of the kind that Dr. Gross spoke of, in which the ankylosis was perfect. He used an osteoclast of his own construction, after the pattern of Robin's, fracturing the femur about three inches above the knee, and the patient made a perfectly good recovery.

The Curette; its Place and its Power in Uterine Therapeutics was the title of the next paper, read by Dr. GEORGE T. HARRISON, of New York. It will be published in full hereafter.

The Relations between Tuberculous Joint Disease and General Tuberculosis.—Dr. FREDERICK S. DENNIS then read a paper on this subject. It will be published in full hereafter.

Dr. GROSS ventured to say that no more important paper than this one would be read before the Association. Its importance was in regard to the early treatment of persons affected with tuberculosis of the joints. He fancied that every one was pretty well assured that primary articular tuberculosis was identical, anatomically and clinically, with primary tuberculosis of the lungs or of any tissue of the body. Not only did tuberculosis give rise to pyæmia, but it behaved very much like some of the other affections of its class. Strictly, primary tuberculosis was a local affection, but it soon extended. In addition to this, we found it behaved like carcinoma in affecting the lymphatic glands, and still more in giving rise to secondary foci and secondary conditions. This being the case, if we resorted to early operations, no matter what form of operation we might perform, he had no doubt we should succeed in saving many patients from the danger of acute miliary tuberculosis. He had some knowledge of the literature of tubercle of the joints, and he thought that the relations between primary and general tuberculosis were very well shown by the cases of death which occurred. Statistics were then cited from Billroth and other writers in support of the views advanced. In regard to treatment, if we laid the affected joint freely open, then with gouges cleaned out all foci, and thoroughly sprinkled the parts with iodoform, we should certainly prevent the formation of tubercle elsewhere in the body, and thus save many lives and limbs. He was quite sure, as Dr. Dennis had shown, in his case of extirpation of glands, that he had prevented dissemination of the disease.

On the Management of Breech Cases in which Both Extremities are reflected upward parallel to the Anterior Surface of the Child was the title of the next paper, read by Dr. WILLIAM T. LUSK, of New York. It will be published in full hereafter.

Women as Midwives.—Dr. THOMAS H. MANLEY, of New York, read a paper with this title. It was a forcible presentation of the well-known views entertained by Dr. Manley on this subject. It devolved upon the profession to provide some adequate means of medical attendance for the poor women of the community. Statistics were cited that had been furnished him by Dr. Nagle, of the Health Department of New York, which went to enforce the need of which he had spoken.

Thursday's Proceedings.

The Report of the Committee on Necrology.—At the morning session, Dr. S. S. PURPLE, of New York, presented the report of the Committee on Necrology, embodying appropriate resolutions in regard to the death of Dr. John G. Adams. The report was accepted, and the resolutions were passed unanimously.

Recent Gifts to Medical Colleges.—Dr. FLINT, Sr., offered the following:

Whereas The New York State Medical Association has heard with great gratification of the recent gift, by Mr. Andrew Carnegie, of fifty thousand dollars, for the erection of a building to be devoted to physiological and pathological laboratories, and of the more recent gift, by Mr. William H. Vanderbilt, of half a million dollars for the promotion of scientific research and instruction in medicine;

Resolved, That the Association tender to Mr. Carnegie and Mr. Vanderbilt congratulations and thanks in behalf of the interests of medical science and of humanity. Carried.

Officers for the Ensuing Year.—The Nominating Committee reported the following list of officers for the coming year: President, Dr. JOHN P. GRAY; Vice-Presidents, Dr. WILLIAM H. ROBB, Dr. J. G. OBTON, Dr. JOSEPH O. GREEN, and Dr. JOSEPH C. HUTCHINSON; Members of the Council for their respective districts, Dr. WILLIAM GILLIS, Dr. R. C. McEWEN, Dr. FREDERICK HYDE, Dr. DARWIN COVILN, and Dr. J. W. S. GOULEY; Secretary, Dr. CALEB GREEN; Treasurer, Dr. JOHN H. HINTON. The report was unanimously adopted.

A recess of five minutes was then taken, for the nomination of executive committees for the several districts.

An Address on Medicinal and Non-medicinal Therapeutics was then read by Dr. ARSTIN FLINT, Sr. It will be published in full hereafter.

A Resolution of Regret was then offered by Dr. FLINT, Sr., that, on account of the illness of Dr. LEWIS A. SAYRE, the members would be deprived of the pleasure of witnessing his demonstration of surgical dressings; and that the sincere sympathy of the Association be tendered Dr. Sayre in his prolonged illness, with an expression of the hope that he might soon be restored to health. Carried unanimously.

A Vote of Thanks.—The SECRETARIES said that he knew the Association was opposed in general to resolutions of thanks, but he felt that all the members would doubtless heartily favor a vote of thanks to Dr. J. W. S. GOULEY for his indefatigable efforts in organizing the Association. Carried unanimously.

Remarks by the President-elect.—After some further announcements by the Committee of Arrangements, the PRESIDENT introduced the President-elect, Dr. GRAY, of Utica, who said that he considered the compliment and honor bestowed upon him to be the highest that he could receive at the hands of his fellows, and he gave them his hearty thanks. The New York State Medical Association was not an offshoot from anything; it was not as a limb broken off from a tree; it was an original and a grand conception, projected into the present as a great necessity for the advance and progress of medicine. The members were men who simply believed in the declaration of principles that underlay the necessary organization of such bodies, as expressed in what was called the Code.

False Albuminuria was the title of the first paper at the afternoon session, read by Dr. GASPAR GRISWOLD, of New York. It will be published in full hereafter.

The following-named papers were then read by title: "Stretching of the Nasal and Infra-orbital Nerves in Ciliary Neuralgia," by Dr. C. E. ROSS, of Chemung County; "A Case of Ovarian Cyst, with Operation," by Dr. T. M. LLOYD, of Kings County; "Organic Disease of the Brain not a Constant Factor in Insanity," by Dr. SIMEON T. CLARK, of Niagara County; "Supporting the Perineum in the Act of Parturition," by Dr. JACOB HARTMANN, of New York; and "Report of a Gunshot Wound of the Stomach—Recovery," by Dr. JOHN H. HINTON, of New York.

The Early Use of the Knife in Nævus of the Cavernous Angioma Variety as contrasted with other Modes of Opera-

tion for Removal was the title of a paper read by Dr. SAMUEL W. SMITH, of New York. The author urged a more general use of the knife, as no other method was so useful in producing immediate good results. He used the term angiomatic nævus without particularizing as to whether the venous or the arterial element prevailed. He had seldom met with a case in which the knife could not be used, and he related the histories of two cases in which he had removed an angioma before it had attained to a great size. In the first case, the tumor was situated on the face, and had been treated elsewhere by methods which endangered life more or less. The result of the operation with the knife was complete success. In the other case the tumor grew from the lip of a child three months old, and that too had been treated without avail by other methods.

Abscess of the Liver was the title of the next paper, read by Dr. E. G. JANEWAY, of New York. It will be published in full hereafter.

Dr. ROCHESTER thought that the author had treated of the subject so exhaustively that it would be superfluous to add any further remarks, but he regretted that the time allowed him had not enabled Dr. Janeway to take up the subject of treatment, and he hoped that he would do so at no distant time.

Diphtheritic Croup was the title of the next paper, read by Dr. J. LEWIS SMITH, of New York. It will be published in full hereafter.

Dr. JOHN P. GARRISH, of New York, remarked that he had recently used bichloride of mercury, in very small doses, with great benefit in cases of croup.

Dr. ROCHESTER said that all physicians had tried various measures in the treatment of croup with more or less success. Recently his attention had been called to iodoform, and, in the case of a strong girl, eight years old, suffering with diphtheria with croupy symptoms, he had applied iodoform in powder, half an ounce to an ounce of bismuth, by insufflation, and the case had done well. Another child in the same family had previously died of the disease. In another case the iodoform had been applied undiluted, and had not caused irritation.

Dr. WILLIAM W. REESE, of Brooklyn, had applied common kerosene to the throat, on a flannel cloth, in cases of diphtheria during the past fifteen years, and, while he had seen severe cases, none had proved fatal when this mode of treatment was adopted. The oil caused irritation of the surface to which it was applied, but he thought that the benefit was largely due to its inhalation.

Dr. CARROLL said that the danger in diphtheria was not always commensurate with the extent of the exudation, malignant cases being an exception. He mentioned a case in which scarlet fever developed after the patient had recovered from diphtheria of nine days' duration. The patient died of the scarlet fever.

Dr. MOORE said that the point made by Dr. Rochester, the necessity of a persistent use of whatever agent was used, was an important one. He then gave his experience with the bicarbonate of sodium, in fine powder, continuously employed by means of the Davidson syringe connected with a glass tube inserted through the stopper of a bottle containing the alkali, a second tube giving exit to the powder. This was constantly blown into the face and throat, notwithstanding the patient's cries. Sulphur burnt in the room at the same time would prove of benefit, and after a while would not be irritating to the occupants of the room.

Typical Cases of Diabetes not before reported was the title of the next paper, read by Dr. ARSTIN FLINT, Jr., of New York. [See page 569.]

Dr. S. S. CLARK, of St. Albans, Vt., related his experience of the influence of dietetics in his own case. It had resulted in

a considerable reduction in his weight—in a few weeks he fell from 215 pounds to below 210. The amount of sugar in the urine also diminished, but there was likewise a marked decrease in the specific gravity of the secretion, to as low as 1.008, but still he was able to detect the presence of a small amount of sugar. The strict diet caused weakness and a general failure of health, so that on several occasions he had felt compelled to go back to a diet containing farinaceous matters.

Dr. FLINT said, in reply to a question, that about 1.010 was the lowest specific gravity of the urine in which he had been able to detect sugar in any of his cases.

Dr. FRIEDEL related the history of the case of his only son, who, shortly after being bitten by a prize-fighting dog, was noticed to have sugar in the urine, and died, in spite of all treatment, including a faithful trial of dietary. The literature of the subject showed the great difficulty, if not the impossibility, of controlling diabetes in the young.

Rupture of the Uterus.—Dr. Ross presented a specimen, and read the history of the case, which had occurred in the practice of Dr. Woodward, of Vermont. The patient was known to have deformity of the pelvis, but had been ten times pregnant, and had been delivered at term. In her last pregnancy she refused to be delivered prematurely, as had been advised by Dr. Woodward, and sent for him (the speaker), when she was taken in labor at term, but death occurred within ten minutes after his arrival, before there was time for any interference. The post-mortem examination showed a full-grown fetus, with all the membranes, in the peritoneal cavity, into which they had escaped through a large rupture in the posterior wall of the uterus.

A Case of Conservative Surgery, and Results.—Dr. R. B. BONTÉCOR, of Troy, showed a man upon whom he had performed a secondary operation after gunshot injury of the shoulder joint, with a very good result. The power of motion which now existed at the shoulder was due to movement of the scapula, the joint itself being ankylosed. The deltoid was atrophied.

Report of a Case of Ligature of the Primitive Iliac Artery for Diffuse Aneurysm of the External Iliac Artery.—This was the title of a paper read by Dr. J. W. S. GOULEY, of New York. It will be published in full hereafter. At the close of his paper, Dr. Gouley referred to a case in which a soldier, in 1864, suffered a penetrating sword-wound of the brachial artery, high up. The treatment of such a case—by ligature above and below the wound—illustrated the management of what might be called an embryo aneurysm.

Dr. FRIEDEL referred to the teachings of John Bell, and remarked that, in his work on "Surgery," would be found an excellent description of modern surgery, even including the practice of antiseptic surgery.

Dr. MOORE related a case of traumatic aneurysm of the brachial artery in which he tried the treatment adopted by Dr. Gouley in the case last reported by him, and in which, as it was impossible to put a ligature above and below, he had the vessel compressed above by the thumb of an assistant. But the assistant's thumb slipped after the sac had been opened, and most terrible hæmorrhage followed, which, however, was finally controlled by pressure with towels. He afterward, with great difficulty, succeeded in tying the vessel below the clavicle, but subsequently hæmorrhage took place under the ligature, and proved fatal.

The paper was further discussed by Dr. C. B. NANCORDE, of Philadelphia.

This ended the formal proceedings. On Thursday evening the Association was entertained at supper at the Murray Hill Hotel by the Fellows residing in New York County. On Friday

morning surgical operations were performed, and demonstrations given, by Dr. FREDERIC S. DENNIS, at Bellevue Hospital, after which the Fellows took part in an excursion to the hospitals and other institutions on the islands in the East River.

CLINICAL SOCIETY OF THE

NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL.

Meeting of November 8, 1884.

Dr. D. B. ST. JOHN ROOSA in the chair.

Hydrochlorate of Cocaine.—Dr. T. E. SATTERTHWAITE opened the discussion of the evening by a paper upon this subject, and added the remark that the subject before the society was one peculiarly appropriate for its consideration from the fact that the name of one of its members must be connected with the history of the drug. He referred to Dr. W. O. MOORE, who was the first to operate, in this country, using the cocaine as an anæsthetic, thus demonstrating its practical value.

The CHAIRMAN stated that he operated every day in the week, using cocaine for anæsthesia. He had to-day removed a soft cataract in a child of ten or twelve years, and had operated for strabismus in a still younger one without pain.

Dr. MOORE considered cocaine cheaper than ether for operations upon the eye; he said that two drachms of the solution, costing \$1.50, would do for ten or twelve operations, while ether would cost from eighty cents to one dollar for each. He had noted the pallor of the conjunctiva after the use of the cocaine, also some paræsthesia of the external surface of the lid.

Dr. J. B. EMERSON said that his experience with hydrochlorate of cocaine had been somewhat limited. He had used it in slitting up the canaliculus and in passing probes in cases of lachrymal obstruction; also in cutting the internal rectus in cases of squint; and in every case had succeeded in rendering the parts sufficiently anæsthetized for all practical purposes. He had tried the drug with four cases of chronic catarrhal conjunctivitis, where the conjunctiva was much thickened and infiltrated. The result in each case had been decided diminution of redness. He had also tried it in two cases of burn of the conjunctiva from lime. Not only did it relieve the intense pain, and render the removal of the lime easy, but it also diminished the redness. He had tried it in three cases of vascular keratitis, with the result of contracting the blood-vessels on the conjunctiva, while their continuation on the cornea was unaffected. He had used it in several cases of foreign bodies in the eye, with the result that the conjunctival hyperæmia was decidedly diminished. There was no doubt in his mind that hydrochlorate of cocaine acted on the vaso-motor nerves and diminished the blood supply, and he could only explain its non-action on the blood-vessels in the cornea by the supposition that the new-formed vessels had no muscular coat, while those of the conjunctiva had. If this was true, another field was open for the use of the drug, viz., in all sthenic inflammations of the eye, in which it could act the double part of relieving pain and reducing inflammation. And it would be contra-indicated in those troubles which were of an asthenic character, such as ulcers of the cornea from inanition, &c. Of course, this must be determined by clinical observation.

He had tried the drug on the unbroken skin with negative results; but, on removing the epidermis and applying it, complete anæsthesia was produced, but only so far as the epidermis was removed. It was evident that it was necessary for the drug to be absorbed, and that absorption could not take place to any extent through the epidermis. He had had still less experience

with its use in aural disease; but, as the external layer of the membrana tympani was a continuation of the epithelium of the auditory canal, it would stand to reason that, in cases of aural disease where the membrana tympani was attacked, there would be little or no effect so far as relieving pain was concerned; and in acute cases, as a rule, the pain ceased when the drum broke. What its effect would be in reducing inflammations of the tympanum where the membrana tympani was gone, remained for the future to show. This he knew, that where granulations were to be removed, or a sensitive ear was to be cleaned, it could be done, without pain to the patient, by the use of this drug.

Dr. F. C. RILEY had had no effect from the drug in a case of intense pannus, though he had applied the solution six or seven times, using three or four drops each time. He had also had a failure in a case of perforating ulcer of the eardrum. Apparently the drug was not absorbed.

Dr. LEZYSKY had assisted Dr. Agnew when performing an iridectomy, the iris being adherent to the cornea, and in an operation for strabismus, without pain. He had tried it in an enucleation, by injection upon the muscles after the division of the conjunctiva, but had been obliged to resort to ether.

Dr. GEORGE J. BALL said that when a two-per-cent. solution of the hydrochlorate of cocaine was applied to the inflamed conjunctiva it was evident, from the immediate blanching of the surface, and from the diminished caliber of the blood-vessels, that the drug exerted an important influence through the vaso-motor nerves. This was further shown by the blanching of other mucous surfaces, and by the lessened hæmorrhage following operations in which cocaine had been employed. It therefore became a question whether the new anæsthetic might not impair nutrition in certain operations in which the slightest impairment might affect the result injuriously. In two cases of cataract extraction in which cocaine was employed the operations had been followed by sloughing of the flap. It might be well to consider whether this was more than a mere coincidence.

Dr. GEORGE B. HOPE had during the past week tested the value of cocaine in the removal of a papilloma of the larynx. The case in many respects was a particularly difficult one. The growth was attached to the lower free margin of the vocal cord, very near the anterior commissure, and, except during forced phonation of the lower tones, remained quite hidden from view. To add to the difficulty, the type of it was hard and very much arched, and the parts about the pharynx and soft palate were thickened and irritable. When the patient was first seen, nearly three months ago, his voice was completely lost, although his respirations were not at all troubled beyond a constant though slight cough, and his general health was good. The growth was of about the size of a pea, with quite a broad pedicle. For a time the efficacy of training with a sound was tried, to see what could be accomplished to subdue the irritation; but, as little or nothing was gained, his attention was turned to the removal with laryngeal forceps. It was impossible to see the forceps in place beyond the tip of the epiglottis, and immediately a suffocating spasm would ensue that made it necessary to manipulate quickly and at great disadvantage. The consequence was that, up to the latest trial, not more than a third of the growth had been removed. In the application of the cocaine in this case, the larynx, epiglottis, pharynx, and soft palate were thoroughly painted with a four-per-cent. solution, and, after waiting a few minutes, it was found that the forceps could be guided well into the larynx without producing any spasm. At the first attempt a larger portion was removed than at all the previous sittings combined. While in this case the larynx and epiglottis were made insensible to the presence of the instru-

ments, the pharynx and soft palate preserved in a measure, their reflex irritability, due, it might be, to the excessive flow and tenacious character of the saliva, preventing the absorption of the drug or washing it away before it could properly take effect.

Referring to the subjective symptoms, the taste was extremely bitter and a little irritating; a sense of decided coldness of the upper air-passages quickly took place; the respirations were free and prolonged, and accompanied by an agreeable sensation of exhilaration; the flow of saliva at first was largely increased, and then the secretion became tenacious and afterward normal. No pain occurred when the tissue was torn away, there was very little immediate or subsequent irritation, and the vocal cords were well under the patient's control. Twenty minims of a four-per-cent. solution, or two thirds of a grain, were used in the case.

Dr. W. C. PHILLIPS said that, as the amount of hæmorrhage varied so much in different individuals subjected to the operation for the removal of hypertrophied tonsils, he determined to make a test-case in a patient who offered the opportunity of a double tonsillotomy. He used the hydrochlorate of cocaine on one side only, applying a two-per-cent. solution, by means of a curved probe covered with cotton, to the left or larger tonsil the left half of the pharynx, and all the tissues that might come in contact with the instrument. After the incision he noticed:

1. That no hæmorrhage occurred for a few seconds, and that it was at no time profuse.
2. That there was very little sensation of choking on the part of the patient.
3. That the cut surface was more than ordinarily anæmic in appearance.

The right or smaller tonsil was afterward incised in the usual way without recourse to anæsthesia, and more choking was noticed, the hæmorrhage was more profuse and instantaneous, and the cut surface of the tonsil was redder than on the other side.

If other operations verified this result we might conclude that the uses of the hydrochlorate of cocaine in cases requiring excision were:

1. To lessen the hæmorrhage.
2. To do away with the choking sensation.
3. To relieve the pain caused by the operation.

He also reported a case of sensitive throat where he was able to make a thorough examination with the laryngeal mirror after the drug had been applied—a thing utterly impossible before.

Removal of a Papilloma of the Larynx under Local Anæsthesia by Hydrochlorate of Cocaine.—Dr. ANDREW H. SMITH reported the following case:

"Mrs. N., aged sixty-five, widow of a clergyman, was referred to me by Dr. A. E. M. Purdy, with a papillomatous growth, of twice the size of a coffee-bean, depending from the anterior commissure of the vocal cords. Aphonia had existed for fifteen years, and of late there had been severe dyspnoea on the least exertion. The growth could be easily seen with the laryngoscope. Its attachment was narrow, and the mass hanging down in the larynx, causing but little inconvenience so long as the breathing was tranquil. But, the moment the respiration was hurried or forced, the growth was forced up between the cords, and occupied the greater part of the area of the rima glottidis. The dyspnoea was then extreme, and the patient often felt as if she would 'lose her breath entirely.'

"Several attempts were made to seize the growth with forceps, and a small piece was removed in this way. But the spasmodic closure of the glottis with each approach of the instrument made it extremely difficult to get below the cords. A snare was then arranged in such a way that the loop would pass be-

tween the cords in a direction parallel to them, but would turn half round in being withdrawn. By this means it was hoped that the growth would be encircled by the loop, as the latter came up crosswise through the rima. But the firm closure of the glottis prevented the rotation of the loop until it had passed the lower end of the growth, and the plan was a failure.

"Meantime I had secured some of a two-per-cent. solution of the new anæsthetic, and on November 12th I pencilled the larynx with it three or four times at intervals of two or three minutes, and then used it for a few seconds in the form of spray. The mucous membrane was then seen to be whitened, as if by the use of a weak solution of silver nitrate. I was now able to introduce a loop of wire crosswise between the cords and for a distance of more than half an inch below them, and to carry it up to the neck of the tumor, the cords remaining motionless. On drawing the wire home, the growth was readily separated from its attachment, and brought away entire. It was found to measure five eighths of an inch in length and one fourth of an inch in diameter. A very moderate hæmorrhage followed the removal, and the difficulty of breathing was at once relieved.

"It would be difficult to imagine anything more satisfactory than the effect of the cocaine in this case."

Dr. W. K. SIMPSON had also used a two-per-cent. solution, preparatory to making laryngeal examinations, with good effect. A "freezing and choking" sensation was complained of in some cases.

Dr. A. H. SMITH also reported Dr. Shaw as having used it in removing a toe-nail. He had wrapped the toe for a few minutes in cotton saturated with the solution, had then divided the nail and removed it, without pain.

Dr. M. J. ROBERTS reported that Dr. Eddy, a dentist, had used it with success in cutting operations upon the gums, but had not found it of any benefit when applied in sensitive teeth.

Dr. C. A. VON RAMDOHR had succeeded in making an examination in a case of vaginismus, which had always before resisted every attempt, by brushing the mucous membrane with some of the solution.

Dr. SENECA D. POWELL reported a case of deep urethral stricture where the sensitiveness was so great that the introduction of even the softest instrument, without anæsthesia, was impossible. He had been in the habit of using nitrous-oxide gas, but, having obtained some of the cocaine, had injected it by means of a small syringe and catheter, and had then found no difficulty in passing a steel sound. After four dilatations using the cocaine, the irritability had so far disappeared that anæsthesia of any kind was no longer required.

Dr. H. G. LITTLE also reported a case of internal urethrotomy in a patient, aged twenty-two, who had suffered from a gleet for fourteen months, following urethritis, and due to strictures of large caliber. He found three strictures—one at the meatus, one at two inches and a half, and the third at four inches and a half, which admitted No. 10, No. 22, and No. 23 F. bulbous sounds, respectively. The normal caliber of the urethra was 33 F., according to Otis. The meatus had been cut to admit a 33 F., but had recontracted to 28 F. The urethra was moderately sensitive. Previous to the operation a two-per-cent. solution was injected by means of a No. 12 F. gum catheter with a rubber bulb attached. Fifteen drops of the solution were then introduced beyond the deepest stricture and the bulb was compressed. Some of the solution came out at the meatus, and the catheter was withdrawn. This was repeated three times at intervals of five minutes. The first introduction of the catheter caused some pain, the second very little, and the last none at all. The penis became quite small, cold, and anæmic, especially the glans. Otis's urethrotome was introduced, five minutes after the last injection, for five inches, and screwed up to 35 F.,

and the guarded blade was withdrawn. The patient complained of severe pain while the strictures were being put on the stretch, but of none at all when they were cut. He afterward stated that the pain was deep down in the canal, and the doctor thought that it was due to the fact that the drug was not injected deep enough. In his next case he would use a soft rubber catheter and introduce it down to the prostatic urethra, whether operating on the deep urethra or not. No unpleasant after-effects were noticed from the use of the drug.

Dr. C. S. BENEDET had used the hydrochlorate of cocaine in three cases with marked benefit:

"CASE I.—Male, aged forty-two, was operated on five months ago, for stricture, by external urethrotomy. Every passage of a steel sound since had been accompanied by so much pain and constitutional disturbance as to unfit him for labor for the ensuing twenty-four hours. On Monday last I passed a 30 F. steel sound, having previously injected twenty minims of a two-per-cent. solution of the hydrochlorate of cocaine by means of a soft rubber catheter. There was absolutely no pain and there were no disagreeable after-results from the operation.

"CASE II.—A piece of iron firmly imbedded in the conjunctiva caused so much pain as to seriously interfere with examination. It was removed without the patient's knowledge after two instillations, of five drops each, of the two-per-cent. solution of the hydrochlorate of cocaine, at intervals of four minutes. The patient spoke voluntarily of the astringent action of the anæsthetic.

"CASE III.—A splinter of wood, 2 cm. in length, was left in the ball of the thumb after repeated domestic attempts at removal, and the broken skin permitted an application of the two-per-cent. solution to the deeper tissues. The necessary incision was then made without pain and with trifling hæmorrhage."

PHILADELPHIA CLINICAL SOCIETY.

Meeting of October 24, 1884.

Dr. BEATES in the chair; Dr. G. BETTON MASSEY Secretary.

Extra-uterine Pregnancy; Rupture; Peritonitis; Recovery.—Dr. E. E. MONTGOMERY read the following history of a case:

"Mrs. M. has had four children and two miscarriages, the last miscarriage occurring some four months since. She has for several years suffered from chronic phthisis. Menstruation was absent for two periods, but two weeks ago she had a bloody discharge for several days. Although she had been suffering from the phenomena usual to her in early pregnancy, she then concluded that she was not pregnant. On the 18th of March, after a fright, she was taken with severe pain in the right side, which, continuing to grow worse, was attended by frequent micturition, a sensation in the pelvis of weight or bearing down, intermittent vomiting, and a serous vaginal discharge. Her husband called at 8 A. M. to-day (the 19th), informed me she had cramps, and asked for a prescription for her relief. I gave a prescription containing an eighth of a grain of sulphate of morphine to each dose, to be given every two hours until relief took place.

"I saw her at 8 A. M., when she was quite pale, complaining still of pain in the right inguinal region. As I had a clinic at 9 A. M., I made a hurried visit, injected a quarter of a grain of morphine hypodermically, and ordered a pill of two grains of sulphate of quinine and half a grain of opium every three hours.

"5 P. M. Pain somewhat relieved; stomach very irritable; would retain nothing; pain greatly increased by vomiting; face pinched, pale, and anxious-looking; lips bloodless; pulse 90. Bimanual examination disclosed the uterus slightly enlarged and retroverted. Douglas's *cul-de-sac* presented a mushy or doughy

sensation; on the right side could be felt a small, irregular-sized mass, which was diagnosed to be an escaped fetus, from a tubal pregnancy. The pills were discontinued, and a grain of extract of opium, in suppository, ordered to be given every six hours, and an alkaline mixture of $\frac{f}{3}$ ss. each of milk and lime-water were given every three hours, by the stomach.

"20th.—She slept poorly, but does not suffer so much from pain. There is marked tenderness over the lower part of the abdomen, more marked upon the left side. On examination *per vaginam*, the mass is felt posterior to the uterus, and is quite hard and tender upon pressure. The uterus is fixed; pulse 90; vomited once. She has been kept perfectly quiet; the bladder relieved by the catheter. Ordered five grains of sulphate of quinine and a grain and a half of extract of opium, in suppository, every six hours.

"21st.—General condition better, though she slept but little. The introduction of the suppositories was attended with so much pain that they were discontinued, and a sixth of a grain of sulphate of morphine, with two grains of sulphate of quinine, was given every three hours, by the mouth.

"22d.—Some sickness of the stomach; pulse 88, temperature normal; very nervous, easily disturbed. Abdomen still tender to pressure. Returned to the use of the suppositories. Slept well last night after twenty-five drops of deodorized tincture of opium were given.

"24th.—Temperature normal. Pulse 80. Abdomen still tender, especially over the lower portion and left side; movement attended with pain. The suppositories induced so much pain that they were discontinued, and thirty drops of deodorized tincture of opium were given by the mouth every three hours.

"Subsequent to this date the convalescence was gradual. She regained her strength very slowly. She left the city the latter part of July, returning about the middle of September, again pregnant. Upon examination, a few days ago, the uterus was found enlarged to the usual size at two months, and posterior to it could be felt a smaller mass, in which the remains of the former gestation were evidently encapsulated.

"In such cases it becomes an important question to decide when we should proceed to surgical measures. Notwithstanding the successful termination of this case, I would not uphold the treatment as the one most likely to yield a favorable result. Had the symptoms of shock and internal hæmorrhage persisted during the third day, as upon the second, it was intended to make an abdominal incision, remove the fetus and effused blood, and ligate the bleeding vessels. Such a course, pursued with the advent of the characteristic symptoms, would, without doubt, decrease the mortality of the accident."

Extra-uterine Pregnancy successfully treated with Electricity.—Dr. Montgomery related also the following history of a case furnished by Dr. JAMES SIBBALD, of Wisahickon:

"Mrs. R., aged thirty-four years, a woman weighing one hundred and seven pounds, of spare build and exceedingly nervous temperament, was married when twenty-one years of age, and had a miscarriage about five months subsequently, since which time (for thirteen years) she was never pregnant, although very desirous of becoming so. Her menstrual periods were always regular and natural up to June 16, 1884, at which time there was no sign of menstruation. One week later she commenced feeling sick in the morning, and also complained of soreness, with decided tenderness on pressure, over the right inguinal region, which gradually increased in severity. At the same time bloody discharges would appear, with no regularity, every week or two, lasting from a few hours to several days.

"On July 3d, while standing in the street dealing with her butcher, she was suddenly seized with a violent pain in the ab-

domen, which caused her to fall in the street. She was picked up and carried to her bed. Morphine was administered hypodermically, and poultices were applied for six days before the tenderness subsided. For the next three weeks there was more or less tenderness over the right inguinal region.

"On August 4th (just one month after the first attack) she had a second attack of local peritonitis, which lasted five days. At this time she was sweeping the floor, when she suddenly fell, overcome by the severe abdominal pain.

"After the acute symptoms of the first attack had subsided, a vaginal examination revealed a soft mass on the right side of the uterus, very sensitive to pressure, and displacing that organ to the left. The sound was passed cautiously into the uterus a distance of over four inches without obstruction. These facts, in connection with the cessation of menses, morning sickness, some enlargement and soreness of the breasts, with occasional bloody discharges from the uterus, warranted a diagnosis of extra-uterine pregnancy.

"On August 18th Dr. Montgomery saw the case in consultation, and coincided in the diagnosis. He advised the destruction of the fetus, which was now in about the eleventh week of gestation, by means of electricity. Eight applications of the battery were made, which had the desired result. The mass is slightly perceptible on examination at the present time, the womb being still displaced on the left side. Menstruation has returned twice since, being perfectly normal, and no inconvenience is now experienced."

Dr. JOHN B. ROBERTS coincided with Dr. Montgomery as to the advisability of performing laparotomy where the symptoms of rupture continued urgent.

Dr. CLARA BARTON asked what form of electricity had been used.

Dr. G. BETTON MASSEY said that the question put by Dr. Barton was of no little importance, and that the answer should depend on a clear conception of the work to be done in a given case. Electricity was employed for two separate and distinct purposes in extra-uterine pregnancy: to kill the fetus, and to produce its absorption. In the former case, a somatic death of the germ contained in the tumor was desired; in the latter merely a molecular death or change. In this latter instance, where the death of the fetus had occurred and we merely wished to promote its absorption, together with that of any effused blood or other material, the indications were almost exactly similar to those in any other intra-abdominal tumor; the current of the greatest electrolytic power—the galvanic—was to be preferred. On the other hand, if we wished to arrest the onward progress of life in the fetal mass, in the interest of the unfortunate mother, that current was to be preferred which would accomplish this object with least danger to the mother. This undoubtedly was the faradaic current. Shock must be the quality of value here. It was simply a question of transmitting a sufficiency of shock through the abdominal wall of the mother to the more vital parts of the fetus. If the ordinary faradaic battery was not strong enough, the gravity of these sad cases would even warrant the building of a weak dynamo for the special purpose. As to the method of application: the external, percutaneous passage of the current by moistened electrodes would seem to be the best. A vaginal electrode might be used, however, the principal endeavor being to send the current directly through the tumor. Dr. Thomas and Dr. Mundé had recently reported a number of cases to the American Gynecological Society, in which successful results had followed the use of electricity. To Dr. Massey's mind, however, their remarks, as reported, lacked definiteness in this matter of the choice of current and as to the exact object aimed at in the individual cases. Dr. Thomas did not advise the use of electricity after

the fifth month, but an operation instead. Possibly he anticipated a speedy, then a probable death, but this could be overcome by increasing the strength of the current in the manner he had indicated. Even if an operation was afterwards performed, the previous arrest of the placental circulation might be of value.

In response to inquiries by Dr. Hall and Dr. Roberts, Dr. Massey said that an insulated sound with a free extremity would form an excellent vaginal electrode, but that the necessary puncturing of the cervix was wholly unnecessary.

Dr. MONTGOMERY said that he had applied one electrode in the vagina, in contact with the uterus, and the other over the hypogastrium. He thought acupuncture unnecessary, although it was formerly the practice to use it, as it was liable to cause perforations from the liquor amnii escaping into the peritoneal cavity. There was but little to choose between the two currents. There were two reasons why electricity was not available after four months and a half or five months. The difficulty to rupture was greatest in the early months, before the third month. After that, we might as well allow the case to go on to a later month, as an operation would be necessary. A large fetus was more dangerous to the mother after the loss of its vitality, and could not be allowed to remain. Although the woman had fallen, in the case related, he thought the fetus was still living, and therefore advised the electricity with the direct purpose of killing it. Subsequently the tumor became smaller. The fetus and appendages became encapsulated in the abdominal cavity in these cases. There was no advantage in destroying the fetus prior to an operation.

CHICAGO MEDICAL SOCIETY.

Meeting of November 10, 1884.

The President, Dr. D. A. K. STEELE, in the chair;

Dr. LISTON H. MONTGOMERY, Secretary.

Two Cases of Gastrostomy. Dr. EDWARD ANDREWS opened his *Report on Surgery* with the histories of these cases. In his introductory remarks he criticised the word gastrostomy as of defective formation; to express the idea of a "stomach-mouth-cutting" fully, we should have to say *gastrostomotomy*.

The first case was that of a little girl, aged six years, who swallowed some concentrated lye several months before she came under the writer's care. The liquid cauterized the lower part of the œsophagus and gradually induced a stricture. Dr. E. P. Cook, of Mendota, Ill., had previously dilated the stricture, and sent the child home greatly improved; but, after leaving his care, she relaxed. When she came under the author's observation she had been unable to swallow anything for a number of days. Dilatation was essayed, and improvement followed for a time with partial power of swallowing liquid food. However, the advantage gained could not be maintained, and, after faithful trial, it became evident that the patient was gradually starving. Gastrostomy was performed in a room which had been sprayed for an hour with carbolic acid, but the spray was not allowed to touch the peritoneum. The operation consisted in making the usual incision in the hypochondrium from near the xiphoid cartilage downward and to the patient's left. The operator found the colon partly in the way, but, pushing it downward, he drew out the stomach with long toothed forceps, identified the viscus by the relations of the gastro-epiploic vein, and secured it to the abdominal wall by a long suture on each side. The stomach was opened freely, and its edges were sewed close to the skin *all around* the incision. There was a good deal of shock, but reaction occurred and union by first intention took place without difficulty, and with no peritonitis.

Reperforated food was carefully inspected, and, on inspection, found perfectly digested, except when meat was used. This, whether raw or cooked, was ejected from the wound unchanged even when retained several hours. For some days the patient improved, but it soon became evident that most of the food, though digested, did not pass through the pylorus. It seemed that this orifice of the stomach required a little pressure to unfold it, and that, whenever the stomach contracted for the purpose, the chyme escaped by the fistula into the dressings and did not pass on into the intestines. A rubber pad tight enough to stop the outflow could not be tolerated, and a soft rubber tube and valve, having a thick circular flange at one end an inch and a quarter in diameter, was provided. The introduction of this valve against the inner wall of the stomach, and clamping the tube outside, prevented leakage. This valve-like device produced no perceptible irritation of the walls of the stomach; the food was retained perfectly and the patient took an abundance of it, and she would call for her meals. This improvement was but temporary, and she began to fail slowly without obvious cause. The power of assimilation seemed gone, and the little patient constantly grew weaker. At the thirty-fifth day after the operation it was perceptible that the end of her life was near, and the last twenty-four hours were accompanied with an obscure fever. The second case was that of an adult male. Six months ago he swallowed some caustic ammonia, producing a contracting ulcer of the lower part of the œsophagus. In September last he placed himself under the writer's care, having been unable to swallow anything for some days. By a diligent use of bougies, the stricture was dilated sufficiently to restore the power of swallowing liquid food. He then returned home, having learned the art of passing the bougie himself, and taking two instruments of different sizes with him. However, he lost the art in some way, and in October returned again in the same condition as before. Repeated trials at dilating the stricture a second time gained nothing permanent, and but a slight temporary power of passing small quantities of liquids a day or two at a time. On the whole, his progress was downward and he was slowly starving, and, aside from this, the points of the bougies seemed to be creating a local inflammation in the right lung, as if they were making a false passage in that direction. Their further use was discontinued, and the same operation was performed as in the first case, except that the opening was smaller. The same difficulty of regurgitation of the food occurred and was controlled by a similar valve. The patient was now doing well, thirty-two days since the operation, and seemed likely to recover.

The plan pursued by Mr. Howse, of London, and those of other surgeons, all of which were quite identical, were then described, also their advantages and disadvantages commented on at length. Dr. Andrews thought that perhaps, on the whole, the mechanical parts of the operation should be something after Howse's plan, and then at the same operation a moderate meal of milk and raw egg should be inserted through a small aspirator tube. Considerable space was allotted to the statistics of this operation, which were not very promising. Of two hundred and seven cases recorded, forty were for cicatricial stricture of the œsophagus, like those just instanced. Of these forty, twenty-one had ended fatally. Still, when patients had no other hope of life, an operation which gave them one chance in two was a great benefit.

Two Cases of Excision of the Rectum were next related in the report. The first case was one of epithelioma. As the disease did not reach down to the verge of the anus, the entire external sphincter was saved. The incision was carried from an inch in front of the anus back to the coccyx, opening the anus antero-posteriorly and cutting off the gut just above the

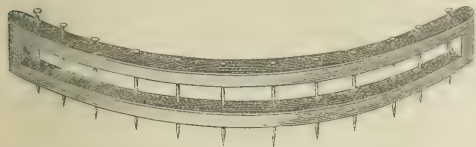
verge. After dissecting it upward a little and tying numerous vessels, the rectum was separated from the pelvic chamber, mainly by the finger, and divided about three inches up, just above the top of the cancer. There was no shock and not much subsequent pain or inflammation.

The second case was almost exactly like the first, except that the verge of the anus was involved in the disease, and, consequently, was dissected out with the rest.

The patients were doing well, but it was too early to state whether there would be any return of the disease.

Litholapaxy was the next topic discussed in the report. Dr. Andrews had operated by this method twenty-three times with only one death. His plan consisted in keeping the nerves of the bladder benumbed during the operation by filling the organ with carbolized water, which tended powerfully to prevent both shock and inflammation. It was worthy of inquiry whether the remarkable local anæsthetic properties of the new agent, hydrochlorate of cocaine, would not enable us to operate without ether and without shock.

A New Varicocele Clamp, devised by the reader, was shown, and the report concluded with its description and with some general remarks on the operation of curtailing the scrotum. This clamp held the scrotum so that it could not slip while the section was made, and yet it did not compress it so as to interfere with the proper treatment of the arteries.



It consisted of two curved steel parallel bows connected at the ends and inclosing a slot three eighths of an inch wide between them. Twelve holes were drilled through the bars, of a size to admit ordinary pins. The surgeon drew the scrotum through the slot to such a distance as he deemed sufficient, and secured it there by inserting as many pins as were necessary. He then cut off that part of the scrotum outside the convex border of the bars. As the scrotum was not pinched by the instrument, the blood spouted freely, especially from the artery at the raphé, and the operator could carefully and deliberately secure every bleeding point. This being accomplished, he sewed the cut edges together, and then, drawing out the pins, removed the bow and applied his plasters. The neatness and dispatch of the operation were thus greatly enhanced.

Political Abuse of the Insane.—In a paper with this title, Dr. S. V. CLEVINGER alluded to a number of instances of abuse of patients in lunatic asylums, and dwelt, in particular, upon the difficulties that Dr. Kiernan, the superintendent of the Cook County Asylum, was meeting with in his attempts to put an end to the abuses which had flourished under political rule.

The secretary having read a letter from the Citizens' Association, requesting the appointment of a number of physicians to act with them in investigating the charges of mismanagement at the asylum, the President appointed Dr. C. G. Smith, Dr. E. F. Ingals, Dr. C. G. Paoli, Dr. R. Tilley, and Dr. C. W. Earle—the Citizens' Association to select three of the five mentioned.

The Shan-Tung Dispensary and Hospital, at P'ang-Chia-Chuang.—The fourth annual report of this institution, prepared by Dr. HENRY D. PORTEE, who was for a number of years a missionary physician in China, was read by Dr. JOHN H. CHEW.

National Sanitation.—The committee appointed at the meeting of September 15th (consisting of Dr. O. C. DE WOLF,

chairman, Dr. R. E. STARKWEATHER, Dr. L. H. MONTGOMERY, Dr. JOHN BARTLETT, Dr. J. H. ETHERIDGE, Dr. A. R. JACKSON, and Dr. J. H. HOLLISTER) presented a report embodying the following preambles and resolutions:

"Whereas, Experience has firmly established the fact that the ravages of certain infectious and contagious diseases may be in great measure prevented, restricted, controlled, or arrested by the enforcement of suitable sanitary regulations; and

"Whereas, The United States is constantly exposed to the importation of disease from foreign countries, and subject, because of the facility and rapidity of inter-state transit to the rapid spread of infection once finding lodgment on our borders; and

"Whereas, This exposure, because of the prevalence of cholera in Europe, is just now unusually great; and

"Whereas, The facts are that matters of sanitation are in some of the States of this Union entirely neglected, while in others they are simply taken cognizance of by the appointments of boards of health in their functions advisory only, and unclothed, not vested, with powers of authoritative action; and

"Whereas, Either of these State boards of health, as now constituted, may prove derelict or inefficient in its duties, or act without concert with, or even in antagonism to, the boards of other States; and

"Whereas, The exigencies occasioned by the appearance of violent epidemics demand organized means for the prompt recognition of the outbreak of disease, and vested authority, limited in its area by the boundaries of the country only, to take such immediate steps in matters of protection, as vaccination, isolation, quarantine, etc., as experience has taught to be useful; and

"Whereas, No national authority in sanitary matters now exists; therefore

Resolved, That it is the judgment of the Chicago Medical Society that the sanitary interests of the United States demand the establishment of a permanent national health authority, which shall have for its main functions the detection of pestilential and epidemic diseases, and the enforcement, where necessary, of sanitary regulations tending to prevent, to abate, or to suppress them.

Resolved, That, as a step toward the consummation of the idea suggested in the foregoing resolution, a committee of three be appointed by this society to collate facts tending to show the usefulness and necessity of a national sanitary organization, and to compile the same in such form as may be available for disseminating information upon, and creating an interest in, national sanitary legislation.

Resolved, That the said committee be empowered and instructed to urge the importance of national legislation upon the attention of the congressional delegation from Illinois, and fittingly to present the subject to the representatives of the people in both houses of Congress."

The resolutions were carried, and Dr. JOHN BARTLETT, Dr. RALPH STARKWEATHER, and Dr. JOHN H. HOLLISTER were appointed members of the committee.

Hydrochlorate of Cocaine.—Dr. BOERNE BETTMAN read a paper on this subject. Hardly two months had passed, he said, since the introduction of this drug as a local anæsthetic, and already current literature teemed with instances of its successful employment. His brother and himself had experimented in order to ascertain its physiological effects.

Two drops of a four-per-cent. solution applied to the left eye of Dr. J. Bettman produced in a few minutes a feeling of slight stiffness. In two minutes complete anæsthesia set in, permitting the manipulation of the cornea with a brush and probe without causing the slightest pain. Sensibility began to return after ten minutes, and was perfectly restored in fifteen minutes. In sixteen minutes the pupil showed a slight dilatation. In two hours it was of medium size. Repeated applications of the drug produced more pronounced and lasting effects. Four drops induced a maximum dilatation in fifteen minutes, and not until eighteen hours afterward did the pupil assume its normal size. Reaction to light in the anæsthetized condition was

prompt. The action of cocaine on the essayist's eye was similar to what had been recounted. Insensibility to touch had disappeared in five minutes. Ten minutes later the pupil was dilated. Distant vision remained the same. The accommodation was decidedly influenced, the near point having receded from 4 inches to 12. Snellen 0.5 was read at four inches with the aid of + 14. The mydriasis was complete in half an hour. The benumbing effects of the drug now began to disappear, and passed away entirely in three quarters of an hour. The dilatation of the pupil lasted eight hours. The outer surface of the right eye was rendered insensible to the pricking of a pin.

CASE I.—Oloff D., aged twenty-two, consulted the writer for a stricture of the nasal duct. A few drops of a four-per-cent. solution of cocaine produced complete anesthesia in three minutes. A Weber's knife was introduced into the canaliculus and thrust forward into the sac, and the duct was slit open with but trifling pain to the patient. With an Anel's syringe a few drops were injected into the nose. Five minutes later the firm stricture was forced with a Bowman's probe. The pain, according to the patient's statement, was remarkably less than that experienced five years before from a similar operation. The anesthesia lasted fifteen minutes.

CASE II.—A piece of steel had been imbedded in the cornea of a policeman for two days. The eye was extremely sensitive. Two drops of the solution benumbed the eye in three minutes. The digging out of the mote with a spud was painless.

CASE III.—Mr. M. complained of severe earache produced by an otitis media acuta purulenta. The introduction of a cotton-holder or speculum was not permitted. Instillation of two drops of the solution was followed by almost immediate cessation of pain, when the ear could be manipulated without the slightest annoyance to the patient.

CASE IV.—The most striking results were obtained in the case of Mrs. T. A cataract operation was performed on the right eye. Several drops of the solution, applied every few minutes, produced complete anesthesia in ten minutes. The corneal section was made without the patient being aware of the fact. The only step in the operation which caused the slightest pain was excision of the iris. At this stage, when questioned about the sensation, she remarked it felt as if a pin were pricking her. She expressed herself highly pleased with the action of the drug, assuring the operator repeatedly that, with the exception of the slight pricking pain, she had felt absolutely nothing of the entire operation. The wound had healed nicely, and her sight was good.

The physiological and therapeutical effects of the remedy might be epitomized as follows: 1. It was a powerful local anæsthetic, not penetrating in nature, rapid in its effects, which, however, were only temporary. 2. It was a mydriatic to a degree determined by the strength of the solution. 3. It produced paralysis of the ciliary muscle, the near point receding from the eye, and distant vision not being influenced. 4. By virtue of its benumbing powers, it might be classified as an anodyne.

Hydrochlorate of Cocaine in Nasal Surgery.—Dr. JEFFERSON BETTMAN related a case of "asthma nervosum," and gave illustrations of the applicability of cocaine in nasal surgery. Its action on the nasal mucous membrane, as had already been demonstrated by Knapp and Gruening, was similar to that on the eye. Only within a very short time had it been possible to obtain even a small quantity of this drug in Chicago, so that his experience had been limited to the following case:

Dr. K., a physician of this city, had been under treatment, suffering from asthma nervosum. The asthma was purely reflex, induced by great hypertrophy of both inferior turbinated bones. Excepting an occasional obstruction to free nasal respiration, but little discomfort was experienced during the day. A recumbent posture and the warmth of the bed were sufficient to produce a reflex turgescence of the lower turbinated bones. A subsequent serous discharge took place, and, to complete the clinical picture, a culminating violent attack of asthma. The nares were extraordinarily sensitive. The introduction of any

instrument into the nose was exquisitely painful. Previous treatment had consisted in applications of the galvanic cautery to reduce the volume of the erectile tissue in the nose. The abnormal sensitiveness, however, would only permit of superficial cauterizations, so that the results obtained were but partially successful. On the 8th of the present month it was resolved to apply the hydrochlorate of cocaine prior to cauterization. A pledget of cotton of sufficient size was soaked with fifteen drops of a four-per-cent. solution and placed in the inferior meatus of the left nostril. At the expiration of ten minutes the parts were perfectly anesthetized. At the end of a quarter of an hour the plug was removed and the parts were thoroughly cauterized with a sharp-cutting electrode. The application exceeded three seconds in duration, and produced but a minimum degree of pain. In fact, the discomfort was so trifling that the patient cheerfully submitted to a second vigorous application at the same sitting. After a period of twenty-five minutes the sensibility of the parts was fully restored. The action of the white heat was so thorough that its ultimate results would probably eclipse the benefit derived from previous more superficial application of the cautery.

BUFFALO MEDICAL AND SURGICAL ASSOCIATION.

Meeting of October 7, 1884.

The President, Dr. F. W. BARTLETT, in the chair.

Tuberculosis of Bone.—Dr. ROSWELL PARK showed some bones which illustrated two phases of tuberculosis. The first specimen consisted of three dorsal vertebrae now firmly welded together, not in their normal relationship, yet happily illustrating a natural cure of that destructive spinal caries which we must regard as a local tuberculous process. It showed that recovery might follow a local tuberculosis, sometimes spontaneously, often with judicious aid from the surgeon.

The other specimen consisted of the three bones of an arm which Dr. Park had amputated at the shoulder joint on account of most extensive disorganization of the shoulder, elbow, and wrist joints caused by a tubercular osteitis and osteomyelitis following typhoid fever. In different places evidences would be seen of various pathological processes, some destructive, some reparative. At the articular ends especially cavities were to be seen, formed by local foci, some of which had ulcerated toward or into the joint, while others had perforated outside the joint capsule, causing periarthritic abscesses and sinuses.

One object he had in showing these specimens was, that he might substantiate the position he took with regard to the frequency and pathological importance of local tubercular processes, not merely in bone, but in nearly every tissue in the body. He had recently been subjected to semi-public criticism because he accepted heartily the view of this subject taken by every pathologist on the Continent of Europe, and those present had been warned that these views were directly opposed to those held by many English and American surgeons, and that therefore they were to be rejected. Passing over in silence the phenomenal ignorance of the critic, he would consider the facts. There certainly was a wide difference of opinion between English and Continental teaching on this subject. Those who simply read English books, and observed but little, fell in at once with English views. But those who not only were familiar with Continental literature, but saw many cases and operated frequently, or made many autopsies, held with remarkable unanimity to contrary opinions. The average practitioner, who perhaps saw from time to time an occasional joint affection of a class among which the typical "white swelling" was most prominent, might be satisfied to accept the English dictum, as pronounced by Barwell, that in nearly all of these cases the

trouble began in the synovial membrane. But the careful student, who insisted on going back as nearly as might be to prime causes, who studied carefully the history of his cases, who was a competent microscopist, who made careful sections of bone, and who had examined many museum specimens, soon came to the conclusion that the large proportion of these cases began by foci of irritation and inflammation in the articular ends of the long bones, and that the evident joint lesion, which was of such objective relative significance, was, after all, not the primary but the secondary disturbance. This view was held by every surgeon and pathologist of note on the Continent to-day. More than this, those ideas had not even the attractiveness of novelty, for they were clearly enunciated nearly fifty years ago by Nélaton, while since that period they had at no time dropped into obscurity, but had been more and more fully stated by him and by his numerous students and followers, who had accumulated sufficient proof, ante-mortem and post-mortem, upon which to base their statements; so that now hardly a general surgical principle could be thought of which the speaker considered more firmly grounded.

If, now, he were asked why English and American authors were oblivious of these truths, the answer was a difficult one. Perhaps it might be got from the reply made to him by Dr. H. H. Smith, of Philadelphia, when he recently asked him the same question. He said: "Doctor, these men don't know anything about it, and, what is worse, they don't want to learn." Dr. Smith, by the way, was the pioneer in these studies in this country, and it was his address on this very topic at the meeting of the American Medical Association in this city, in 1878, which first aroused Dr. Park's own interest in the subject. To it and to the illustrations accompanying it he would gladly refer those who were interested in the subject.

But time failed in which to give even a brief discussion of the subject, for it was an exceedingly broad one and had by itself a literature already extensive, emanating from authorities too eminent to be ignored or disbelieved. Volkmann, whom the speaker esteemed the best living authority in this matter, had written much thereon, and his contribution to the new "Deutsche Chirurgie" was to be looked for with great interest. Every one of the other German surgeons whose names were daily in our mouths was in the closest accord with him. To him König, of Göttingen, had dedicated his recent monograph on "Tuberculosis of Bones and Joints." Recent publications by Mögling, Schreiber, and many other German students contained the same sentiments. Prominent among the French stood Ollier, of Lyons, with all the noted surgeons of the French capital in full agreement. The beautifully illustrated work of Launelouge was a fitting addition to Nélaton's original brochure, and more recent contributions by Menard and Charvot admirably continued the subject into the present year.

But where in our own literature should we look for a suitable exposition of the subject? In no text-book that he knew of. An occasional journal article placed some individual on record in a creditable way. Gibney's admirable little work on "Hip-Joint Disease" furnished an excellent exposition of the true pathology of tubercular disease of a single joint, though by the nature of the work the discussion had to be limited, but it stamped him as an advanced pathologist as well as orthopædist.

The pernicious doctrine of the traumatic origin of chronic joint disease had unduly influenced the average professional mind, in which a pathological problem was never harbored, and, as a consequence, the effect of the general constitutional condition and of the inherited predisposition (diathesis) was overlooked. So it happened that the accidental cause—the injury—was given the chief rôle, and the tuberculous diathesis was made

to play a subordinate part or entirely overlooked. Why teachings of this kind were given a high place at home, and the facts accumulated in every Continental museum and in a rich foreign literature were ignored, was a question to which no satisfactory answer could be given. It was a fact for which no sufficient excuse could be alleged. We had reached a period when operative and mechanical surgery was carried to the extreme, and the fundamental principles of surgical pathology were almost ignored. It was making progress by the base of the triangle and not by its apex.

Reports on the Progress of Medicine.

OPHTHALMOLOGY.

By CHARLES STEDMAN BULL, M. D.,

LECTURER ON OPHTHALMOLOGY AND OTOTOLOGY IN THE BELLEVUE HOSPITAL MEDICAL COLLEGE; SURGEON TO THE NEW YORK EYE AND EAR INFIRMARY; OPHTHALMIC SURGEON TO ST. MARY'S FREE HOSPITAL FOR CHILDREN AND TO THE NURSERY AND CHILD'S HOSPITAL.

Antiseptics in Ophthalmology, especially Mercuric Sublimite; and Cauterization of the Cornea.—Sattler (Bericht der ophth. Gesellschaft: "Beilageheft der kl. Mon. für Augenheilk.," 1883) has been investigating the subject of antiseptics usually employed in ophthalmic surgery, with special reference to whether they suffice to render the effect of germs innocuous within a short space of time, such as from one to five minutes. He thinks that in the sterilized blood-serum brought to the consistency of jelly we possess an admirable productive soil in which to carry on the culture-experiments at the temperature of a hatching oven. Sattler has convinced himself by numerous experiments that by no means all, not even the most, of the germs which are capable of development, when inoculated upon the cornea of animals, are able to take root, germinate, and produce a purulent keratitis; and this is especially true of the spores of various kinds of bacilli. This has been proved to be true also of the mold-fungi and of the cleft-fungi. In his experiments he at first employed as germs the micrococci from purulent dacryocystitis, and later the jequirity bacilli, as they always produced a conjunctivitis, and when inoculated in the cornea, gave rise to an hypopyum-keratitis. Thin silk-fibers, sterilized by heat, were saturated with the pus-micrococci or jequirity-bacilli dried and then placed for from four to twenty-four hours in shallow bowls, which were filled with the various antiseptic solutions. Here they lay from one to five minutes, and were then rapidly washed out with boiled distilled water, placed upon the culture gelatin, protected from the atmosphere and observed at blood temperature. These experiments showed that, among all antiseptics hitherto employed, chlorine-water held the first rank, as it sterilized the germs within one minute. Next in value to the chlorine-water was the mercuric sublimite in solutions of 1 per mill, or 0.5 per mill., which are, however, too strong to use on the conjunctiva, though very useful for disinfection of the surrounding skin, hands, sponges, and instruments. A solution of 0.2 per mill. sufficed in three minutes to sterilize the germs. Weaker solutions, however, proved very uncertain in their effects. Next in value came resorcin and hydrochinon in three-per-cent. solutions, which in about three minutes cause all action to cease in the germs. Concentrated aqueous solutions of salicylic acid also proved very useful, as well as a solution of salicylic and boric acids, but the application of the latter to the eye is painful and its preparation somewhat difficult. Solutions of carbolic acid stand in about the same category. Boric acid, on the contrary, proved of very slight value, even when of concentrated strength. The peroxide of

hydrogen, recommended by Landolt, also proved of but little value, and absolute alcohol proved entirely useless in destroying dried germs. The older the impregnated threads are before being brought in contact with the antiseptic solutions, the more easily are the germs destroyed or neutralized. Before operating, Sattler recommends that the hands of the operator and of his assistants, and the skin of the patient's face in the vicinity of the eye, should be disinfected with a solution of mercuric sublimate, one to a thousand. Then the conjunctival *cul-de-sac* should be disinfected with a sublimate solution, 0.2 to the thousand, which does not irritate the eye. In cases where suppuration had already started, and hypopyum was present, he recommends, in addition, either a moistened sublimate bandage, or frequent applications of sublimate cloths, upon the eye. In some cases he employed powdered iodoform. If all these means fail, he recommends cauterization of the wound by the galvanocautery. The battery he employs is a Grenet's element of moderate size, and the current can be broken with the greatest ease. The eyelids are held apart with the fingers or elevators, and the end of the platinum cautery is applied easily and carefully to the desired spot, without fixing the eyeball or using any anæsthetic.

The Mode of Origin of Myopia.—Förster (*Ibid.*) considers briefly the two hypotheses of tension and convergence offered in explanation of the origin of myopia. If the tension hypothesis is correct, then spasm of the tensor muscle is to be avoided, concave glasses are to be cast aside, and when they are used it is always at the expense of the healthy condition of the eyes. If the convergence hypothesis is correct, the convergence of the axes must be diminished as far as possible; concave glasses then become indispensable in limiting the growth of myopia. The fact that the misuse of too strong concave glasses is not injurious to the eyes works against the tension hypothesis and somewhat in favor of the convergence hypothesis. Should all these cases of myopia not become progressive, is it because the over-correcting glasses caused these patients to fix at a greater distance, and thus effected a diminution in the convergence of the axes? If the diminution of the myopia always depends on a neutralization of the spasm of accommodation, it would follow that this spasm is a secondary symptom, caused by the marked convergence employed by myopes in their work. Thus, in the development of myopia we meet with a *circulus vitiosus*, the first link in the chain being a faulty position of the body, which induces too large an angle of convergence. The extreme convergence first causes spastic myopia, which in its turn calls for a still greater degree of convergence, and thus is developed the real axial myopia. This *circulus vitiosus* can be broken by paralyzing the accommodation with atropine, or by increasing the reading distance by the use of glasses. The momentary success of the atropine treatment seems to indorse the tension hypothesis. Since, however, the cause of this—viz.: the axial convergence—is not done away with by the use of atropine, the spastic myopia continually recurs whenever the patients return to their original work.

A New Instrument for Tattooing the Cornea.—Parisotti ("Rec. d'ophth.," Jan., 1884) has invented a modification of Taylor's instrument for tattooing the cornea. It is composed of a rectangular hollow shank of hard rubber, resembling the fountain-pen. At one end of this shank is a bundle of needles, arranged in the same manner as in Taylor's instrument. At the other end is a rubber ball carrying a small metallic tube, which can be screwed into the upper end of the canal in the shank. The lower half of the surface of the ball rests in a metallic half-cup. The central canal of the shank is filled with a solution of India-ink before the operation. The needles are then pressed into the corneal leucoma, and, on withdrawing them, the thumb

must press upon the rubber ball at the top, which forces the India-ink into the holes made by the needles.

Ophthalmoscopic Examinations of the Insane.—Uthoff (Bericht d. ophth. Gesellschaft: "Beilageheft d. kl. Mon. f. Augenheilk.") here gives the results of his examination of a large number of patients suffering from the various forms of mental disease. The number of his examinations amounted to 542. Of these, 170 were cases of psychosis or functional mental disturbance; 150 were cases of progressive paralysis of the insane; 135 were cases of chronic alcoholism; 56 were epileptics, and 31 were cases of positive foci of disease of the brain or spinal cord. Among these last 31 cases there were 20 that showed symptoms of disease in the fundus, viz.: 8 cases of cloudiness of the retina or papilla with slight neuritis optica; 3 cases of choked disc; 3 cases of atrophy of the optic nerve; 1 case of extreme hyperæmia of the papilla in tubercular meningitis; 2 cases of retinal hemorrhage; 2 cases of hemianopsia; 1 case of conjugate deviation. Pupillary reaction was absent six times in these 31 cases: three times in *tabes dorsalis*, twice in *ophthalmoplegia externa*, and once in senile dementia. Among the 150 cases of progressive paralysis of the insane, 75 showed signs of ocular disease, the most frequent being a more or less intense opacity of the retina and disc, which extended far toward the periphery of the retina. Slight forms of actual neuritis optica were relatively rare (6 cases), and a real papillitis or choked disc was never seen. Next to the opacity of the retina and disc, the most frequent ophthalmoscopic symptom in progressive paralysis was atrophy of the optic nerve, of which there were 13 cases; in addition, there were 21 cases of abnormal discoloration of the papilla which could not be designated with certainty as atrophy. There were also three cases of marked hyperæmia of the papilla and one case of retinal hemorrhage. The reaction of the pupil to light was wanting in about half the cases of progressive paralysis. There did not seem to be any connection between this symptom and the presence of ophthalmoscopic changes. Among the 135 cases of alcoholism, 55 showed positive ophthalmoscopic changes, the most frequent being a diffuse cloudiness of the retina and papilla, with indistinctness in the outlines of the latter, but without much disturbance of the vision. The next most frequent change was a partial atrophic discoloration of the disc, limited usually to the temporal half. In two cases there was a slight neuritis. In five cases there was hyperæmia of the papilla. Among the 56 epileptics, 7 showed pathological changes in the fundus, 2 showed slight neuritis optica, 2 abnormal discoloration of the papilla, 1 hyperæmia of the papilla, and 2 slight cloudiness of the retina and papilla. Among the 170 cases of psychosis, 17 showed pathological changes in the fundus. Of these, 11 showed slight cloudiness of the retina and papilla, 3 were cases of discoloration of the papilla, 2 showed hyperæmia of the papilla, and 1 was a case of retinal hemorrhage.

Certain Changes in the Plica Semilunaris.—Eversbusch (*Ibid.*) calls attention to certain unusual conditions in the semilunar fold in man, among the rarest of which as a congenital anomaly is the presence of cartilaginous tissue. Another congenital anomaly includes the various forms of angiomas, the most common of which consists in enormous dilatation of the caliber of the vessels with simultaneous thickening and fibrous degeneration of their walls. The fibrillary structure of the plica is in places pressed aside and made to gape. Many of the blood-vessels are newly formed and surrounded by masses of small round cells, while others are older and only separated from each other by a very thin frame-work. Immediately beneath the epithelium the fine fibrous connective tissue is infiltrated with red-blood corpuscles. Acquired anomalies of the plica are excessively rare, except those due to inflammatory

changes in the conjunctiva. He reports two cases of hypertrophy or increase in volume of the plica, manifestly due to constitutional syphilis and probably consisting in a gummy infiltration of its tissue, though Eversbusch seems to think the trouble was a syphilitic papule.

A Peculiar Case of Persistent Hyaloid Artery and Coloboma of the Iris.—Eversbusch (*Ibid.*) reports a case of this kind in a child a few days old, with bilateral coloboma iridis downward. In the space of the coloboma was a white, triangular plug, which extended from the bottom of the coloboma to the lower periphery of the lens. Attached to both sides of this plug, and running backward toward the optic nerve, was a persistent hyaloid artery, still containing blood. On the death of the child the eyes were examined, and the plug was found to be intimately connected, not only with the lower margin of the lens and with the hyaloid artery, but with the sclera also. The similarity of the plug in histological structure to the normal sclera and its persistent connection with it render it probable that this was a persistence of the mesodermal process found in the earliest phases of embryonic life.

A Peculiar Form of Ophthalmomalacia.—Schmidt-Rimpler (*Ibid.*) discusses the nature and pathology of those cases of atrophy of the eyeball with simultaneous diminution of tension coming on in a healthy eye, and gives the results of the examination of such an eye removed from the body of a patient who had died suddenly from heart disease. Before death, attention had been attracted by the small size of the left eye, ptosis of the lid, and myosis, though the eye was apparently healthy. The vessels of the left auricle were dilated and the skin was livid. A few days before his death there was a transient paralysis of the right arm. At the autopsy there was found marked softening of the upper layers of the left optic thalamus. The left sympathetic was markedly pigmented, and small apoplectic extravasations were found between the ganglion-cells. A careful examination of the eyeballs and orbital contents showed a marked diminution in volume of the left eye. In a second case, of a woman who died of cerebral apoplexy, there was diminution in size of the left eye, loss of tension, ptosis, and myosis. At the autopsy there was a clot as large as a walnut in the right thalamus, extending into the corpus striatum, chronic inflammation of the pia mater, and serous effusion. The ptosis must not be attributed to a paralysis of Müller's muscle, for any diminution in size of the eyeball will cause a drooping of the upper lid.

The Presence of Caterpillar-Hairs in the Conjunctiva and Iris, together with the Formation of Tubercle-like Nodules.—Pagenstecher (*Ibid.*) reports a singular case of this kind in a female child, aged ten years. The ocular conjunctiva of the right eye was strewed with small nodules as large as a millet-seed. These nodules were dense, grayish-yellow, and freely movable; they occurred both in groups and isolated, and were numerous near the retro-tarsal fold. The iris was thrown into folds in the infero-nasal quadrant, and at the pupillary end of these folds were a number of similar grayish-yellow nodules. Under the microscope these nodules resembled tubercles, except that in the center of each nodule there was a caterpillar-hair. An iridectomy was then made, and the section of iris containing the nodules removed. These, on being examined, showed the same structure, and also the presence of the same animal-hair in the center of each nodule. It is supposed that a caterpillar crept into the child's eye, and that in brushing it out some of the hairs were driven into the conjunctiva, and even through the cornea. This origin seems, at the best, to be problematical.

Sarcoma of the Choroid surrounded by a Shell of True Bone.—Leber (*Ibid.*) reports a case of this kind, found in an eye which had been enucleated from a girl, aged eleven, on ac-

count of an intra-ocular tumor in a glaucomatous condition. The tumor was found in the posterior section of the choroid, was sarcomatous in character, and was of a marked cavernous structure. The bony capsule inclosing it was surrounded by fibrillary connective tissue. The origin of the ossification could not be traced to a previous plastic choroiditis, and hence we must assume here an actual, partially ossified sarcoma. The remaining choroid showed no special changes. There was, however, a shrunken cataract, with a space between capsule and lens, capsular cataract, and a peculiar variety of partial staphyloma at the sclero-corneal margin. There was no cause found for the development of the sarcomatous growth.

Xerosis of the Conjunctiva.—Leber (*Ibid.*) reports here some cases of xerosis conjunctiva, with abundant proliferation of the fissured fungi, in the desquamating epithelium. In one case, in a child, the whitish mass was easily removed from the eye, and was found to consist of epithelial scales which were covered with fungi, both round and rod-shaped. They existed in great numbers, and were also found in the corneal ulcers, in the interior of suppurating eyes, and also in the kidneys. He undertook to inoculate some of these spores in the conjunctival *cul-de-sac* of animals, and gained surprising results. The lids were kept closed for two days, and then opened, and it was found that a severe purulent keratitis had developed. A microscopical examination showed in the purulent infiltration in the cornea a number of groups of the fungi, of usual rosette-shape, and around them a zone of denser purulent infiltration.

The Ætiology of Ophthalmoblenorrhœa Neonatorum.—Zweifel ("Archiv für Gynäkologie," xxii, 2, 1883) reviews the literature of this subject, and publishes some observations and conclusions drawn from his own experience. He refers to Hecker's observations (same "Archives," xx, 3) as leading only to negative results in leaving the ætiology of ophthalmia neonatorum still more problematical than it should be. He admits that, although the relative rarity of the disease is in favor of there being a specific virus, yet it is not a certainty. It is certainly true that children have been born with healthy eyes of specifically diseased mothers, and the eyes have remained healthy. It can not be even approximately determined how many children escape the great danger of being infected. This fact, in connection with the very easy transmission of the inflammation of the eyes from one child to another, makes of but little significance every conclusion as to the specific character of the affection from the frequency of its occurrence. Hecker's opinions, based on observation of over eighteen thousand births, do not indorse the generally accepted view of the infection of the eyes by the vaginal secretion during birth. The highest percentage of conjunctival disease did not occur in long-protracted labors, but in those of the shortest periods, and Hecker thinks that the duration of the period of incubation from one and a half to six days does not necessarily demonstrate that the infection can only occur during birth. Admitting that infection may occur after birth, this must take place either by subsequent infection from the lochial discharge or by the contact of the secretion from the eyes of one child to those of another child. The most important question in the ætiology of the disease is, however, to decide whether the ophthalmia neonatorum is caused *solely* by infection with specific cocci, the diplococci of Neisser, or the gonococci; or whether the simple catarrhal vaginal secretion or the normal lochial discharge *can* also produce a purulent conjunctivitis. The probability of an identity of the virus in ophthalmia neonatorum with the virus of gonorrhœa has been demonstrated by the inoculation of the purulent secretion of the conjunctiva upon the urinary passages of adult men and women. In his experiments with the normal lochial secretion, Zweifel took the secretion from the vagina in a thoroughly clean pipette

and as rapidly as possible inoculated the conjunctival *cul-de-sac* of a child. A portion of the secretion was also examined microscopically, and there were found in it but very few cocci, and no gonococci at all. In the six cases in which this experiment was carried out, not a single case of purulent conjunctivitis occurred. The lochial secretion from the third to the thirtieth day was used, bloody, serous, and purulent being thus employed, but the result was always the same. As regards prophylaxis, Zweifel regards Credé's method as the best—that is, the instillation of a two-per-cent. solution of silver nitrate. This no doubt causes a superficial cauterization of the epithelium, but it does not injure the eyes.

Miscellany.

THERAPEUTICAL NOTES.

Alum in the Treatment of Intermittent Fever.—This remedy has lately been tried quite extensively in Russia, says the "Union médicale." Dr. Ignatieff, after a series of clinical experiments, rejects the drug as being far inferior to quinine. Dr. Pethoff, on the contrary, has been successful in several obstinate cases, in some of which quinine had produced no effect. Dr. Koltchewsky, whose experience with the new antipyretic has been large, states that, out of twenty cases which were carefully observed, the results were negative in all but two. The evidence in general goes to prove that alum is of doubtful value in intermittents.

Inunctions of Oil in Fever.—Colrat reports, in "Lyon médical," a series of observations on children. In a number of cases of scarlet fever, small-pox, and broncho-pneumonia he has found the temperature lowered as much as two degrees by the use of oil inunctions. The decline begins immediately after the inunction, the temperature remains stationary for two hours, and then begins to rise again. The younger the child, says the reporter, the more pronounced is the fall of temperature. He noticed that a child who was previously restless and irritable would fall asleep at once after being rubbed. No special directions are given as to the method to be followed.

The Antipyrine Rash.—Now that antipyrine is coming into more or less general use as an antipyretic, it may be interesting to state that several cases of an exanthematous eruption following its use have been observed in the clinics at Breslau, Zürich, and Strassburg, as reported by Cahn in the "Berliner klinische Wochenschrift." The eruption appeared, without any subjective symptoms, in the form of round, reddish, somewhat elevated spots, which disappeared on pressure. It was principally distributed over the back and the extensor surfaces; the head, the palms of the hands, and the soles of the feet were not affected. The eruption disappeared as soon as the use of the antipyrine was discontinued, but returned when it was resumed.

Hypodermic Injections of Calomel for Syphilis.—Julien ("Annales de dermatologie et de syphiligraphie") uses the following preparation:

Calomel.....	0.10-0.15 gramme;
Powdered gum arabic.....	0.05 "
Distilled water.....	1.00 "

This is the amount used at each injection. Two injections are given in the region of the nates, and no more are used until three weeks have elapsed, when two more are given. This constitutes the entire treatment. The results reported are most gratifying.

Chlorate of Potassium in the Treatment of Burns.—The "British Medical Journal" contains an article by Dr. J. W. Brown, suggesting the use of a lotion of chlorate of potassium (five grains to the ounce) in burns. It is applied on pieces of lint, and these are covered with oil-silk. The dressing should be changed at least four times a day. The writer speaks highly of this mode of treatment.

The Internal Administration of Salt in Uterine Hæmorrhage.—Betz, in the "Centralblatt für Gynäkologie," commends this remedy in emergencies in which transfusion is impracticable for any reason. He dissolves five grammes of salt in half a litre of hot water, and gives

three tablespoonfuls of the solution at intervals of five minutes. He cites a case in which this simple remedy proved efficacious, and states that its use is not accompanied by nausea.

The Treatment of Cold Abscesses with Injections of Iodoform.—Verneuil ("Revue de thérap. méd.-chir.") treats cold abscesses as follows: Having removed the pus by means of a Potain's aspirator, he injects into the cavity, with the same instrument, from fifteen to twenty grammes of iodoform dissolved in glycerin. If this amount is not exceeded, he states, there is no danger of poisoning. The solution fills all the depressions in the abscess cavity, and deposits a uniform layer of iodoform on the pyogenic membrane. This method of treatment is said to be perfectly safe, since there is no fear either of introducing septic germs or of setting up fresh inflammation, such as frequently follows the injection of tincture of iodine. The simplicity of the method renders it easy of application by one of no pretensions to surgical skill.

Esmarch's Escharotic Powder.—The "Union médicale du Canada" publishes Esmarch's formula for an escharotic powder as follows:

Arsenious acid.....	1 part.
Sulphate of morphine.....	1 part.
Calomel.....	8 parts.
Powdered gum arabic.....	48 parts.

To be applied to superficial growths, warts, etc., the surface having first been shaved off with a bistoury.

The Treatment of Albuminuria with Chloral.—Dr. Wilson states, in the "British Medical Journal," that he has treated a few cases of albuminuria with this drug, and has noticed that by its constant use he was able to cause a complete disappearance of albumin from the urine, the albumin reappearing as soon as the remedy was suspended. The theory of its action is not stated.

Salicylate of Sodium in Acute Cystitis.—Borgehold mentions, in the "Deutsche medicinische Wochenschrift," twenty cases of acute cystitis in which he produced good results by the internal administration of this drug. During the first three days of the treatment he gives half a gramme every two hours; for the succeeding eight days he gives the same quantity thrice daily. The writer asserts that with this method he is able to dispense entirely with irrigation of the bladder, and that in none of the cases thus treated has the disease become chronic.

Iodide of Potassium for Asthma.—The "Union médicale du Canada" gives the following formula used by Huchard in asthma:

Iodide of potassium,	
Tincture of lobelia,	
Tincture of polygala, each.....	10.00 grammes;
Extract of opium.....	0.10 gramme;
Distilled water.....	250.00 grammes.

Dose, a teaspoonful morning and evening.

An Ointment for Hæmorrhoids.—The "Revue de thérap." gives this formula for an ointment to be used for hæmorrhoids,

Camphorated ointment.....	32.00 grammes;
Powdered galls,	
Acetate of lead, each.....	10.00 grammes;
Extract of belladonna.....	0.25 gramme.

Apply from two to four times daily.

Cholagogue Pills.—The "Union médicale" publishes the following formula, suggested by M. Guéneau de Mussy:

Resin of podophyllum.....	0.025 gramme;
Euonymin.....	0.05-0.10 gramme;
Extract of hyoscyamus.....	0.05 gramme.

This is made into one pill. Extract of belladonna, 0.01, may be substituted for the hyoscyamus.

M. Blondeau (in the same journal) suggests, instead of this pill, the following:

Extract of hyoscyamus.....	0.01;
Extract of nux vomica.....	0.01;
Resin of podophyllum.....	0.005;
Soap.....	0.05.

From one to three such pills are to be taken at bedtime.

Both of these prescriptions are recommended for the vomiting of pregnancy also.

Lectures and Addresses.

REMARKS ON
MEDICINAL AND NON-MEDICINAL
THERAPEUTICS.

AN ADDRESS DELIVERED AT THE FIRST ANNUAL MEETING
OF THE NEW YORK STATE MEDICAL ASSOCIATION,
TOWN, NOVEMBER 20, 1884.

By AUSTIN FLINT, M. D., LL. D.

IN order that the scope of my remarks may be apprehended at the outset, it is necessary to define the terms embraced in the title of this address.

The term therapeutics may denote only the employment of medicines, that is, drugs. This is a limited sense of the term. In a broader sense it comprehends the treatment of diseases not by medicines alone, but any means or appliances. The latter is the more correct definition according to the etymology of the term (*θεραπεύω*), and in this sense I shall now use it.

The term medicinal, as I shall use it, is restricted to the employment of drugs.

The title which I have chosen might be otherwise expressed as remarks on the treatment of diseases with and without drugs.

From time immemorial it has been considered to be the chief office of the physician to prescribe and regulate the employment of drugs. Not entering at all into the past history of medicine, let me ask, What is the prevailing popular sentiment at the present time, in all countries, respecting the part which medicinal therapeutics play in medical practice? Is it not that the practice of medicine exclusive of the use of drugs would be like the play of "Hamlet" with the part of Hamlet omitted? How many patients at this day would be satisfied to be treated for an illness without drugs?

Several years ago my friend, Professor Alfred Stillé, visited with me my wards at Bellevue Hospital. I pointed out a patient who had recovered from pneumonia, the disease having passed through its course in the most favorable manner. As we were leaving the patient he exclaimed, in a tone of much irritation, "No thanks for my getting well; I have not had a particle of medicine since I came into the hospital." The case had been left to nature, and nature had effected the recovery as quickly and as completely as possible; yet the patient was much aggrieved, and felt that he had been neglected. Now, had he been treated with perturbatory medicinal agents, which might have induced ailments in addition to those incident to the disease, perhaps prolonging the duration of his illness and rendering his convalescence tedious, doubtless he would have been satisfied, and possibly have felt grateful to his physician. Have not many of those whom I now address met with analogous instances in which patients, having been subjected to little or no medication, have manifested after recovery no sense of obligation for medical services? Some may even have reproached themselves for having incurred the unnecessary

expense of medical attendance, and may perhaps have declined to make an adequate pecuniary compensation. Professional visits not supplemented by requisitions on the apothecary are deemed by many valueless. The worth of medical attendance is measured, in the minds of not a few, by the number of drugs prescribed. How generally, after a consultation, is it asked, "What new remedies are to be given?" and how often a feeling of disappointment, if the consulting physician has simply concurred in the propriety of the remedies already in use, leads to the reflection that a consultation might just as well not have taken place!

The twofold sense of the term medicine is significant. In one sense of the term medicine denotes "a science, the object of which is the cure of diseases and the promotion of health." In another and the more popular sense the term denotes a medicinal agent or a drug. The same is true of the term physic. Up to a late period this term was used in a sense synonymous with the term medicine as the name of a science. Popularly the term physic means a drug, and especially a purgative drug. These facts are cited to show that outside of the medical profession the practice of medicine and medicinal therapeutics are regarded as about one and the same thing.

It is a general impression with those who are not of the medical profession that eminence in this profession is based chiefly on superior attainments in medicinal therapeutics. The fact that one may be an accomplished anatomist, an erudite physiologist, a profound pathologist, and a distinguished diagnostician, irrespective of extraordinary knowledge or skill in the medicinal treatment of diseases, is not appreciated. In this point of view, the science of medicine in the popular mind is identified with the employment of drugs.

Now, it is needless to argue before this audience that a physician is not to be regarded purely as a prescriber of drugs; that the terms medicine and physic may have a broader and higher sense than that which limits their application to the *materia medica*, and that true eminence in the profession is by no means derived exclusively from medicinal therapeutics. I need not say that to withhold drugs in the treatment of cases of disease is as important an exercise of professional judgment as to employ them. In view of the prevailing popular errors just referred to, it is often more politic for the medical practitioner to employ than to withhold drugs. By withholding drugs he may not only disappoint the expectations of his patients or their friends, but he incurs a risk of having his disuse of drugs attributed to want of either knowledge of the disease or of interest in the case, and thereby to a withdrawal of confidence. The prevalence of these errors thus places the practitioner in a false position. Nothing is easier than to prescribe drugs. On the other hand, to refrain from their use may require, in addition to knowledge and judgment, not a little firmness and independence. An ignorant or weak practitioner, therefore, may be tempted to pursue a medicinal treatment in opposition to his judgment, or in order to cover up his lack of knowledge. Herein the popular errors may interfere with the usefulness of medical practice. Moreover, these errors

do injustice to the science of medicine as well as to the medical profession.

The time will come when the physician will not be regarded as solely a therapist, but as a medical counselor, whose functions embrace the preservation of health and the prevention, not less than the treatment, of diseases. Patients will then congratulate themselves, and be congratulated by their friends, whenever it is decided by the physician that potential drugs are not called for; but, as it should be added, drugs will then never be withheld if, in the judgment of the physician, they are indicated. This reformation, if I may so call it, is to be brought about by a change in popular ideas respecting the practice of medicine. Let the public understand that drugs are not to be employed, as a matter of course, whenever a physician is consulted or is in attendance. Let placebos be seldom, if ever, required for a moral effect. Let it be understood that, as modern clinical studies have demonstrated, many diseases end in recovery from an intrinsic tendency and self-limitation. Let it be popularly known that most medicinal agents are curative, not directly but indirectly, by the removal of obstacles in the way of recovery; that nature is always the efficient curative agent, and, therefore, that the physician is nature's servant, not her master. Let the value of medical science in the palliation of suffering and the promotion of the toleration of diseases which do not admit of recovery be fairly appreciated. When these desirable objects are accomplished, the medical profession will hold a position in public estimation higher even than it now holds; a more elevated standard of medical education will become a necessity, and the usefulness of the profession will be increased. Moreover, this reformation will prove the most efficient of the means for the protection of the public against irregular and illegitimate systems of medical practice, and, as may be added, against the unworthiness of those who profess to be regular or legitimate practitioners. The most popular of the systems opposed to legitimate medicine and the regular profession at the present time is based on the assumption that diseases are controlled by drugs, according little or nothing to a natural tendency to recovery. Correct popular ideas of medicinal and non-medicinal therapeutics are incompatible with confidence in this or any system of practice which assumes that recovery from diseases is always due wholly to medicinal agencies. Let correct ideas prevail, and there will be fewer instances than now within the ranks of the profession of unworthy means to secure a local reputation and to enhance the sense of obligation for professional services; in other and plainer language, there will be less of quackery within, as well as without, the medical profession.

As preliminary to the reformation in popular ideas to which I have alluded, there must be more unanimity than now exists in the medical profession respecting medicinal therapeutics. There is considerable diversity among physicians with respect to their estimation of the importance of drugs, and a corresponding diversity in practice. There are practitioners who, in this point of view, exemplify opposite extremes. Some practitioners have an excessive and unwarrantable faith in drugs; others are excessively and unwar-

rantly skeptical. Any practitioner who has a considerable number of acquaintances among his fellow-practitioners will readily recognize examples of each of these extremes. Pharmacomania is a form of mental aberration affecting alike certain physicians and patients. The latter have a morbid craving for, and the former an abnormal propensity to prescribe, drugs. If it so happen that a pharmacomaniac patient is under the care of a practitioner to whom that name applies, there may be mutual satisfaction, but, if not so mated, there is apt to be dissatisfaction on both sides.

The pharmacomaniacal practitioner never tires in the use of remedies. He has a distinct drug for every symptom, and remedies are multiplied in proportion as new symptoms appear. One may know that to this extreme a practitioner belongs by a glance at the array of phials, cups, and glasses at the bedside of the patient. The prescriptions, which accumulate daily, contain a multiplicity of ingredients, each, perhaps, designed for a particular object; or, to borrow a well-known comparison, they are like a heavily loaded shotgun—intended to do execution, although discharged without much regard to aim. His patients after recovery have a large collection of souvenirs consisting of the daily surplus of prescribed remedies. To the apothecary he is a "joy for ever." A catalogue of the medicaments presented by the apothecary as a memento shows that Molière did not exaggerate in the enumeration with which he opens his play "*Le malade imaginaire*." The pharmacomaniacal practitioner is never discouraged in the use of new remedies. He reads medical treatises and journals with special reference to these, and he loses no time in giving his patients the benefit of all in succession. As one new remedy after another becomes obsolete in consequence of having been found useless or injurious, he relinquishes it only to supply its place by one still more recent, always accepting the latest with as much avidity as he had accepted the remedies which he has discarded.

The practitioners who exemplify the opposite extreme, the skeptic, or, as may be said, the disbeliever, need not be delineated, inasmuch as the picture would be precisely the reverse of that just presented.

Truth, of course, lies somewhere between these extremes, and between the truth and the extremes are different gradations. Here, as in other instances, "*in medio tutissimus ibis*" is the conservative maxim. The practitioner who holds a just medium between the two extremes has sufficient confidence in medicinal agents, but, recognizing that in proportion to their potency they do either good or harm, he must be satisfied that they are clearly indicated before he employs them. He will not prescribe potential drugs at a venture, but only for a clearly defined purpose. He shoots after having taken deliberate aim, and he shoots with the rifle in preference to the shotgun. He requires competent testimony, based on trustworthy experience, before subjecting patients to the trial of new remedies. Fully alive to the progress of knowledge in medicinal therapeutics, he holds fast to what is actually known, and adopts what is new on satisfactory evidence afforded by his own experience added to that of others. He may make original observations with a view to enlarge the boundaries of our therapeutical knowledge, but

his observations are made with due precautions, not overlooking his responsibility for the welfare of his patients. His observations have for their sole object the discovery of truth for a beneficent end. He is conservative, but his conservatism is not foggyism. He cultivates and practices medicine as a science, but he never forgets that medicine is a science of which the pervading principle is humanity.

A fact not to be lost sight of is, that the only reliable basis of therapeutical knowledge is clinical experience. It is not sufficient to conjecture from the properties of drugs as to what they ought, reasoning *a priori*, to effect. It may take a long time for clinical experience to overthrow fallacious conclusions reached by such a method of reasoning. The results of experiments on lower animals must be accepted with caution. It is true that clinical experience is beset with difficulties which exemplify the Hippocratic axiom *experientia fallax*. The *post hoc ergo propter hoc* errors are often enough alluded to; nevertheless, they abound in the practice of medicine. How often can we be assured, when notable improvement has followed a measure of treatment, that the same improvement would not have followed the employment of a different measure, or if nothing had been done therapeutically! Great as are the difficulties in the way of determining the precise therapeutical value of drugs, clinical experience is the only tribunal from which there is no appeal.

It is a striking fact that our knowledge of medicinal agents, which are acknowledged to have the most special therapeutical value, until lately rested wholly on an empirical basis—that is, their *modus operandi* was entirely unknown. This is true of cinchona and other antiperiodic drugs, mercury and iodine in syphilis, and chalybeates prior to our present knowledge of anæmia. At the present time it can be said that the therapeutical value of cinchona, mercury, and iodine probably depends on their efficacy as parasitocides. This explanation came long after the discovery of the therapeutical value of these drugs. It is not easy to name drugs of equal therapeutical value, to the knowledge of which *a priori* reasoning led the way. Yet, although clinical experience is the only basis of our actual knowledge, analogical and speculative reasoning may, with propriety, precede the appeal to that tribunal. The explanation of the *modus operandi* of the remedies just named, together with the recent most important developments in ætiology, has given a direction to therapeutical observations which may lead to an immense advancement of our knowledge of medicinal therapeutics. I refer to discoveries respecting the parasitic origin of certain infectious diseases. Let the doctrine be established, as may be expected, that all infectious diseases are parasitical, and let the class of infectious diseases be enlarged, as may also be expected, and the therapeutical problem will be to ascertain by clinical experience a parasiticide for each parasite. Let this be accomplished, and therapeutics will have undergone a revolution the extent of which it is impossible to foresee. It is most inspiring to think of the luster to be conferred on medicine, and of the boon to humanity, by the ability to control all the essential fevers, together with septicæmia, epidemic cholera, influenza, pertussis, dysentery, and last, but first in relative

rank as a life-destroyer, pulmonary phthisis! Never before could the medicine of the future have appeared more bright and encouraging than at the present outlook.

My remarks thus far have had reference to medicinal therapeutics. In the same desultory way I shall offer some remarks on non-medicinal therapeutics.

As a rule, medical practitioners who overestimate medicinal therapeutics underestimate, in an equal ratio, non-medicinal therapeutics. The pharmacomaniacal practitioner is not likely to give much heed to non-medicinal measures of treatment. So, also, the pharmacomaniacal patient is prone to disparage and neglect measures which are non-medicinal. He places his reliance solely on the *materia medica*. It is perhaps true that drugs, oftener than non-medicinal measures, are used to an injudicious extreme, and that generally the evils of the former are greater than those of the latter; nevertheless, errors in the treatment of diseases irrespective of drugs are by no means infrequent, and may be productive of not a little harm. To some of these I shall advert. My remarks will relate to diet, to the use of alcohol, to "cold-catching," and to mental influences exerted upon patients.

Alimentation is not less an essential factor in therapeutics, as applied to both acute and chronic diseases, than in the maintenance of health. Certain fundamental principles of dietetic therapeutics are to be kept in view. One of these is that there is never danger from over-nutrition in either acute or chronic diseases. Whatever risk there may be of harm from an over-ingestion of food relates to the processes preliminary to assimilation and nutrition.

Another fundamental principle is that the immediate lethal agency, when diseases destroy life by slow asthenia or exhaustion, is chiefly innutrition. Graves acknowledged indebtedness for the suggestion of his plan of "feeding fevers" to a country doctor, who said that he seldom lost patients with fever provided they were not allowed to die of starvation. Now, what is true of fevers as regards the importance of a sustaining diet is equally true of all diseases which kill by slow asthenia. Death is due to starvation, and may be averted if effective assimilation and nutrition be practicable. In all chronic diseases which admit of recovery, this termination is the more assured and expeditious, as a general statement, the better nutrition is maintained. The tolerance of those diseases which do not admit of recovery and the prolongation of life are promoted in proportion as alimentation can be made conducive to nutrition.

It follows from these principles that, in cases of either an acute or a chronic disease, the question is not whether the patient is in danger of being over-nourished, but, on the contrary, whether alimentation is adequate to the capabilities of the processes relating to nutrition. Patients can not be over-fed so long as the food taken is digested, assimilated, and appropriated by the tissues. As it is impossible always to graduate with exactness the quantity of food to the digestive, assimilative, and nutritive powers, it is evident that the quantity must often either exceed or fall below the capabilities of the processes relating to nutrition. Now, of

the two evils, which is the lesser? I answer, an overplus of aliment, inasmuch as nature provides for a redundancy more than for a deficiency of alimentary supplies.

It is a sound maxim in medicine that the therapeutic indications derived from science and from nature, as a rule, should harmonize. If they be in conflict, the scientific indications are open to suspicion. I will add, as another maxim, that the true principles of therapeutics are, in accordance with the dictates of common sense. If there be antagonism here, when are considered the liabilities to error in scientific deductions, it is reasonable to suspect the correctness of the latter. These maxims are applicable to the dietetic treatment in diseases. Nature's indications as regards diet relate to appetite and the sense of taste. That appetite and taste were intended to govern the choice and quantity of aliment in health no one can doubt, especially if it be added that the indications derived therefrom are to be regulated, to a certain extent, by reason and experience. But it is a popular error that these natural indications are necessarily morbid in cases of disease, and that, instead of being recognized as constituting a governing principle, they are to be opposed. This popular error prevails to a certain extent in the medical profession. How often, perhaps I should say how common, is it that patients with different diseases are denied food when nature indicates the need of it by the sense of hunger! How common, when food is allowed, for patients to be denied the articles of food which they desire and made to take articles which they dislike! I look upon this disregard of nature's indications in the same light as upon the exclusion of fresh air from the sick-room, against which Sydenham was the first to rebel, and upon those restrictions in the use of water internally and externally which have not even now become obsolete. The dietetic regulations, in cases of disease, need reform to-day fully as much as reform was heretofore needed in regard to air and water. It is evidence that science is astray whenever it opposes, instead of co-operating with, the indications of nature.

There are, however, conditions of disease in which the instincts fail to express the needs of the system by means of appetite and taste, for the reason that the needs are not felt owing to morbidly blunted perceptions. These conditions exist in the essential fevers, especially typhus and typhoid fever. Under these circumstances the knowledge and judgment of the practitioner must, as far as practicable, take the place of nature's indications. Science must assume the control, whereas, under other circumstances, it should merely regulate the dietetic treatment under the governing influence of the instincts. The problem, then, is to satisfy the needs of nutrition as fully as possible, irrespective of any guidance by the instincts of the patient. Both reason and experience show how precious, under these circumstances, are the foods in which are combined, by the hand of nature, in due proportion, all the elementary principles—namely, milk and eggs. For these there are no substitutes. Supplementary thereto are the various farinaceous foods, and the animal foods other than those just named.

With regard to meats, a common error, both popular and professional, and one productive of a vast deal of harm,

is to consider their nutritive value as fairly represented by either infusions or decoctions, or by the juices obtained by pressure. The valuation by most persons outside of the medical profession, and by many within it, of beef-tea or its analogues, the various solutions, most of the extracts and the expressed juice of meat, is a delusion and a snare which has led to the loss of many lives by starvation. The quantity of nutritive material in these preparations is insignificant or *nil*, and it is vastly important that they should be reckoned as of little or no value, except as conducive indirectly to nutrition by acting as stimulants for the secretion of the digestive fluids or as vehicles for the introduction of nutritive substances. Furthermore, it is to be considered that water and pressure not only fail to extract the alimentary principles from meat, but the excrementitious principles, or the products of destructive assimilation, are thereby extracted; hence, not very inaptly, beef-tea has been compared to urine, and, a few years ago, a German experimenter, whose name I can not recall, declared that he produced fatal toxæmia in dogs by feeding them with this popular article of diet.

Meat liquefied and retaining all its alimentary principles is a great desideratum in dietetic therapeutics. The preparation known as Leube's Meat Solution consists of flesh brought by artificial digestion to the condition of peptones. It is an equivalent of the solid flesh, and, therefore, represents all the alimentary principles of meat. A late improvement in the preparation by Rosenthal has made it acceptable to the palate. This method of preparing meat in a liquid form should supersede most of the various preparations which are more or less in vogue. It is desirable that the merits of preparations after the methods of Leube and Rosenthal, not only of beef, but of the various kinds of meat, should be properly appreciated by physicians and patients.

Chewing meat and rejecting by expuition its nutritive constituents is a practice not less irrational, unscientific, and opposed by common sense, than disgusting. As a rule, if meat is craved and agreeable to the palate, it is allowable; and it is a shame to tantalize nature's cravings with the shadow, withholding the substance.

In leaving the subject of diet, I will express the belief that not a few maladies, more especially those affecting the nervous system, often originate in, and are protracted by, insufficient alimentation. Evidence of the correctness of this belief is afforded by the successful treatment of certain nervous affections in women after the plan inaugurated by Weir Mitchell, in which alimentation is an essential factor. In place of the senseless apothegm, "death in the pot," it might be more pertinently said, life in the pot, inasmuch as this utensil, if regarded as the symbol of aliment, represents health and vigor.

The question whether alcohol is a food has, within late years, given rise to much discussion and investigation. As I suppose, few, if any, now hold to the opinion that the sum total of alcohol ingested is eliminated from the body as alcohol, or deny that it supplies a material for the production of animal heat. It is, therefore, a food. All will

admit that it may be made a potential agent for either good or harm. The use of alcohol as a therapeutic agent should have no connection with its use or abuse in health, except as regards proper precautions lest its use in illness may eventuate in an alcoholic habit after recovery. A physician may be a zealous advocate of total abstinence in health, but evidently his zeal should not lead him to withhold alcohol from his patients whenever benefit is to be derived from its employment as a therapeutic agent. It were, indeed, a cruel injustice to patients to deny them this benefit because a vast amount of misery and crime is attributable to alcoholic intemperance. The value of alcohol in therapeutics and the indications for it are to be determined precisely as in the instance of any other therapeutic agent. Opium, like alcohol, is capable of abuse in health, but who will say that thereby it is any the less worthy of the eulogium of Sydenham, who called it the *magnum donum Dei*!

In the medical practice of the last century there have been notable oscillations in the use of alcohol as well as of other therapeutic agents. The doctrine of Brown, which, on purely theoretical grounds, led to its free use, was followed by that of Broussais, which stigmatized its use as incendiary on grounds equally theoretical. Its free use came again into vogue about forty years ago. Todd was then its ardent advocate, and he was, perhaps, the first to emphasize its agency as a food. Its use for several years was doubtless too indiscriminate, and carried to an extreme. At the present time there is considerable diversity of opinion and practice as regards its use among medical practitioners, but the tendency of late years has been to use it with more and more reserve. Where lies the truth between the extremes as regards the proper place of this agent in therapeutics? I shall not undertake to answer this question. It covers too much space to be considered on this occasion. I will only remark that the oscillations in the past and the diversity in practice at the present time show conclusively the need of further investigation. Here is one of the many questions in therapeutics which call for the analytical study of carefully recorded clinical experience.

I have endeavored to do something in the way of this study with reference to phthisis and the continued fevers.* As a conclusion based on the analysis of a considerable number of recorded cases, I feel warranted in affirming that, in a certain proportion of the cases of phthisis, alcohol antagonizes the progress of that disease, and that in the treatment of the continued fevers (typhus and typhoid) it is a means of saving lives which without it would be lost. Reasoning by analogy, it is a logical conclusion that with similar indications it is an important therapeutic agent in the treatment of essential fevers other than those just mentioned, and also of diseases of which fever is symptomatic.

It is a theoretical error, which I suppose to be common,

to regard the action of alcohol within the body as purely that of a stimulant. A cardiac stimulant it undoubtedly is, and this is one of the modes in which it is useful. But the prevention of the waste of tissues by acting as a substitute for their components in the production of animal heat is another rational *modus operandi*. And another, hitherto not so much considered as it probably will be under the guidance of pathological developments now in active progress, is its antiseptic property.

If alcohol is useful as a material for combustion within the body, it is indicated in the condition of fever prior to the indications for its employment to sustain the failing powers of life. The object, in this point of view, is to forestall these indications and prevent the asthenia giving rise to them.

It is yet to be ascertained in what diseases, and to what extent, alcohol may act as an antiseptic, or a parasiticide, or an antidote. It has been supposed to counteract the noxious effects of certain venoms. A similar claim has been made for it, on the basis of experience, in the treatment of diphtheria. The conjecture is not unreasonable that in other fevers it may have a controlling influence by destroying, either directly or indirectly, the special causative agent, whether this be, or be not, a morbid organism. Here is an object for clinical observations. It is evident that, employed with a view to test fairly its value as an antiseptic, or a parasiticide, or an antidote, in different diseases, it may be important that alcohol be employed early, continuously, and in a quantity as large as may be tolerated. In its employment for these purposes, as also for the support of the vital powers, the greatly increased tolerance of alcohol in different diseases, and in different cases of the same disease, must be taken into account.

The phrase to "catch cold," so often in the mouths of physicians and patients, is a curious solecism. It implies not only that the term cold denotes something positive, but that this something is a living entity, a sort of demon in ætiology, which does not catch, but is caught by, the unfortunate victims. The synonym *Erkältung* pervades German medical literature remarkably. There are few diseases in the nosology in the causation of which "catching cold" does not enter, according to German writers. At the present time a question under discussion in Germany is whether pneumonic fever is attributable to "catching cold," and there appears to be an emancipation of the minds of some of the most distinguished of the physicians of that country from the traditional notion that this disease is the work of the ætiological evil spirit represented by the term "cold."

There is an indefinite latitude in the phrase to "catch a cold." The phrase is used to denote an inflammation or a catarrh of the mucous membrane of the air-passages, but its application is extended to various affections in various situations. There is but little ground for its application to the ætiology of the so-called nasal, pharyngeal, laryngeal, and bronchial catarrh; but I shall confine my remarks to the supposed danger of "catching cold" as involved in therapeutics.

* *With the following:* "Clinical Report on Pulmonary Tuberculosis; giving an Account of Twenty-four Cases of Arrested Tuberculosis, etc.," "Am. Jour. of the Med. Sciences," January, 1858.—"On the Management of Pulmonary Tuberculosis, with special reference to the Employment of Alcoholic Stimulants," "Trans. of the N. Y. Acad. of Med.," 1863.—Treatise on "Phthisis: its Morbid Anatomy, Ætiology, etc.," pp. 446, 1875.—"Clinical Reports on Continued Fevers, based on an Analysis of 164 Cases," pp. 390. Buffalo, 1852.

If most persons outside of the medical profession were to be asked what they considered as chiefly to be avoided in the management of sick people, the answer would probably be "catching cold." I suspect that this question would be answered in the same way by not a few physicians. Hence it is that sick-rooms are poorly ventilated, and patients are oppressed by a superabundance of garments and bed-clothes. The air which patients are made to breathe, having been already breathed and rebreathed, is loaded with pulmonary exhalations. Cutaneous emanations are allowed to remain in contact with the body, as well as to pervade the atmosphere. Free exposure of the body is deemed hazardous, and still more so bathing or sponging, the entire surface of the body being exposed. Patients not confined to the bed, especially those affected with pulmonary disease, are overloaded with clothing which becomes saturated with perspiration, and is seldom changed for fear of the dreaded "cold."

These sketches are from life, and the observations of every medical practitioner furnish real illustrations. The supposed morbid agency of cold is a traditional error deeply rooted in the popular mind. It interferes often, in no small degree, with the satisfactory management of cases of disease. It is an obstacle in the way of securing for patients hygienic conditions, the importance of which may be greater than that of drugs. It is obstructive to the adoption, in cases of fever, of the antipyretic treatment, which is, perhaps, the most important of the improvements in modern therapeutics. How reluctant are physicians, on account of traditional ideas, to make trial of either the cold affusion of Currie, the cold bath, the wet sheet, or even sponging of the body, in cases of pneumonic fever, although testimony is ample of the safety and utility of these measures of treatment! Of those who are convinced of the safety and utility of these measures, how many hesitate to resort to them lest, if the termination be fatal, the death might be attributed to a therapeutic innovation so opposed to popular prejudice!

A reform is greatly needed in respect to "catching cold." Let the demon be exorcised first from the medical, and next from the popular, mind! Let it be generally known and believed that few diseases are referable to the agency of cold, and that even the affection commonly called "a cold" is generally caused by other agencies; or, perhaps, by a special agent which may prove to be a microbe. Let the axiom, "a fever patient never catches cold," be reiterated until it becomes a household phrase! Let the restorative influence of cool, fresh, pure atmosphere be inculcated! Let it be understood that in therapeutics, as in hygiene, the single word *comfort* embodies the principles which should regulate coverings and clothing. Non-medical therapeutics will have gained much when this reform is accomplished.

My concluding remarks will have reference to mental influences to be exerted on patients.

I have often thought that a consideration of the influences which the physician may exert, either for good or harm, on the minds of his patients, should hold an important place in therapeutics. Our text-books are silent on this subject, and

I am not aware that much, if any, attention is given to it in oral teaching. It can not, however, be doubted that success in the management of cases of disease often depends largely on mental influences conjoined with other measures of treatment.

The mental constitution of some practitioners is unfortunate as regards the exertion of favorable influences on the minds of patients. As we all know, there are members of our profession with no lack of ability or of educational requirements, who are irreproachable in character, whose manners are unobjectionable, and who are in all respects gentlemen, but who are not successful in medical practice. Something is lacking which it is not always easy to define. There is a loose screw in the mental mechanism, the effect being an inability to inspire patients with confidence, faith, and hope—three potential elements in therapeutics. It is fortunate for the physician and for patients if this lack of constitutional fitness for the practice of medicine is discovered early, and if it lead to the adoption of some pursuit to which there is a better adaptation.

There are certain rules bearing on the influences to be exerted on the minds of patients which should be considered and adopted, although they may not accord with the natural temperament or disposition of the practitioner. Here, as in other instances, we find in the practice of different physicians two extremes which are widely apart. Here, too, is applicable the trite maxim, "*In medio tutissimus ibis.*" Let me endeavor to sketch an illustration of each extreme.

I have in my mind's eye the picture of a practitioner whose mental temperament is in a high degree sanguine and hopeful. It is difficult for him to look in any other direction than the bright side of a case. His attention fastens on all the encouraging points. He instinctively exaggerates these, and undervalues those which are discouraging. All the possibilities as regards a favorable progress and termination he believes will be made available for his patients. He is confident that his cases will prove, if need be, exceptions to general rules.

This is a rough outline of one extreme—an extreme of optimism. Practitioners who exemplify this extreme are liable to errors of prognosis. They lose patients when they had entertained and held out confident expectations of recovery. For this they may incur blame. But there is reason to believe that these expectations not infrequently contribute to recovery, and, as regards an influence on the issue of disease, they assuredly do not do harm to the patient.

A picture illustrative of the opposite extreme represents a practitioner who assumes the responsibility of a case always anticipating the worst that can befall the patient. His solemn manner and melancholy mien inspire nothing but forebodings. His attention is intent on the discovery of bad prognostics. He shakes his head distrustfully at symptoms which appear to be favorable. His words of encouragement, if he venture upon them, are so qualified by his apprehensions as to give rise to fear rather than to hope. This is an outline of a medical pessimist. The errors of prognosis into which practitioners of this stamp fall are the opposite of those of the optimist. Patients recover who

have been condemned to die. These errors are less likely to occasion blame than those which involve fallacious expectations of recovery. But, it is to be added, a gloomy or fatal prognosis may contribute to its fulfillment.

It would require some presumption to draw a picture illustrative of a *juste milieu* between these extremes. The little space which remains on this occasion precludes the attempt were I disposed to make it. I will close with a few fundamental precepts pertaining to mental therapeutics, stated dogmatically and aphoristically, for the sake of brevity.

The practical object in mental therapeutics is to promote the favorable progress of diseases by means of influences exerted on the minds of patients.

The influences which may be exerted on the minds of patients are of sufficient importance to constitute a distinct branch of non-medicinal therapeutics.

Abnormal mental conditions, although the intellectual faculties may not be materially impaired, often lead to an exaggeration of symptoms, imaginary ailments, and undue apprehensions, which interfere with the favorable progress of diseases by affecting appetite and digestion, by preventing sleep, by discouraging co-operative efforts for restoration to health, and by a general depressing effect upon the functions of the body. The methods for the removal of these obstacles in the way of the favorable progress of diseases are within the province of mental therapeutics.

Confidence, hopefulness, and courage are conducive to the favorable progress of diseases. To endeavor to secure and maintain these is a duty incident to mental therapeutics.

Observation teaches that the strength of the mental faculties in health and the extent of attainments in any branches of knowledge are in no measure reliable criteria for judging of the mental condition of patients affected with disease. This assertion may be applied even to moral qualities and religious convictions. Disease is the great leveler intellectually and morally, as well as physically. Men and women often become on the sick-bed, in a mental and moral point of view, children, and are to be managed as such. Shakespeare, as always, was true to nature when he compared to a sick girl the imperial Cæsar when suffering from a paroxysm of intermittent fever.

In contrast to the assertion just made, every physician of much experience has met with instances exemplifying the efficacy of determination and a strong will in resisting and overcoming disease. To recognize and endeavor to fulfill nature's indications, as regards the potential influence for good which the mind can exert over the body, is a duty incident to mental therapeutics.

Instances are not infrequent of the efficacy of an intense belief in the curative power of certain measures under circumstances which, to the superficial observer, appear to prove conclusively a special intervention of Providence. The so-called faith cures, and those which follow the laying on of hands, or other procedures in themselves inoperative, except through the mind, are full of significance as regards the potential agency of measures pertaining to mental therapeutics. The history of Perkinism and the prevalence, now and heretofore, of other medical delusions are most instruc-

tive, and have, perhaps, not been sufficiently considered with respect to the lessons to be drawn therefrom, and their practical applications to legitimate medicine.

The influence of mental activity, under an absorbing sense of duty, on the tolerance of diseases might be illustrated by many examples. Kane endured the hardships of an expedition toward the North Pole with a diseased heart. General Gordon, who at this time holds a prominent place in the thoughts of all Christendom, is a sufferer from angina pectoris. To quote his own words, "I may say that I have died suddenly over a hundred times." The London "Lancet," referring to the subject, expresses the hope that he (General Gordon) may "long continue to show to the world what can be done by men with grave diseases, but with faith in their own mission and in God's providence." It is this faith which is a potential factor in the tolerance of disease. The other side of this picture shows that pitiful introspection exemplified in so many of our patients and which is as potential for harm as the worthy aims which absorb the mental faculties are effective for good.

I do not doubt that many a life has been shortened by injudicious injunctions to rest from labors which, from their nature and long continuance, had become indispensable to health as well as happiness. The sanitary agency of work is too often overlooked. How wretched often is the remainder of life when, either for the delusive expectation of happiness or the equally delusive expectation of improved health and length of days, activity is exchanged for idleness. Insanity and suicide are not infrequent consequences. The introduction into medical nomenclature of the term nervous asthenia, for which I am responsible, and that of the congeneric terms neurasthenia and nervous prostration, subsequently introduced, I am bound to say, have done harm, although they express veritable pathological conditions. These terms have done harm by expressing a condition which is often imaginary, and by leading to the evils resulting from physical and mental inactivity.*

The physician who appreciates the importance of mental therapeutics, and of the duties incident thereto, will not fail to hold out to patients the encouraging features of a case. He will not give way to gratuitous forebodings. He will be circumspect in forming, and still more in announcing to his patients, an unfavorable prognosis. He will be slow to hazard a prediction as to the precise date that a disease will prove fatal, and still less will be guilty of the brutality of imitating a judicial sentence of death. He will keep out of the view of his patients discouraging possibilities, but not those which warrant hope. He will strive judiciously and skillfully to bring to bear all the potential mental agencies of which he may properly avail himself. He will throw on the scale of hopefulness all the weight to be derived from those doubts and difficulties which beset diagnosis and prognosis. He will make due allowances for the limitations of medical knowledge and his own deficiencies.

* The term "nervous asthenia" was introduced by me in the first edition of my treatise on the "Principles and Practice of Medicine," published in 1866. Afterward the term neurasthenia was introduced by the late Dr. Beard. Nervous prostration is a popular term much used at the present time.

I have alluded to some of the precepts which underlie mental therapeutics. A consideration of the various modes of exerting influences on the minds of patients would embrace manifold details. Many questions arise in regard to the course to be pursued under the varied circumstances incident to disease and to the diversities of human character. Some of these questions involve points in casuistry. The subject in its practical aspect has a wide scope, and I commend it to some one who may aspire to be the author of a work on the non-medical treatment of diseases, according a proper relative space to the influences to be exerted on the minds of patients, or, in other words, to mental therapeutics. Such a work is a desideratum in medical literature.

Original Communications.

A CASE OF

IMPACTED EXTRA-CAPSULAR FRACTURE OF THE NECK OF THE THIGH BONE.*

By JOSEPH C. HUTCHISON, M.D.,

BROOKLYN, N. Y.

On the 31st of August, 1883, two gentlemen, one a medical man, fifty-six years old, weighing two hundred and four pounds and enjoying robust health, drove, in a high-top buggy, from Lake Luzerne to Lake George, in order to make a professional visit. The horse seemed to be perfectly gentle, and required a good deal of urging to make him accomplish the trip in a reasonable time. The "turn-out" was furnished by a livery stable.

They drove up to the piazza of the Fort George Hotel, stopped, and, as they were preparing to get out, the horse suddenly started to run, and, making a short turn, the wheels became locked, the buggy was upset, and the occupants were thrown violently to the ground.

A medical gentleman, who saw the accident, hastened to assist his professional brother to get out of the way of the horse, which, after running some distance, turned and came back over the same road, with the fragments of the wagon dangling at his heels, apparently with the purpose of finishing his work of destruction.

The doctor had walked, with a little assistance, five or six steps, to get out of the way of the running horse.

He suffered deep-seated and severe pain in the right trochanter major, which received the force of the blow, and at once concluded that he had an impacted extra-capsular fracture of the thigh bone. This opinion was based upon the fact that the pain in the trochanteric region was excessive, and it seemed impossible that so heavy a man, thrown violently to the ground from such a height and striking upon the trochanter, could have escaped this fracture; and he inferred that the fragments were impacted, because he had been able to take a few steps after the injury. So sure was he of his diagnosis that he requested the surgeon, who was on the spot and assisted him in getting out of the way of the horse, not to manipulate the limb for fear of disturbing the impaction. He did not lose consciousness, nor did he suffer from shock in the slightest degree.

The other gentleman got up immediately without assistance,

but was greatly shocked, and it was subsequently found that he had a broken rib.

Soon after the doctor was put to bed he was carefully examined by Dr. W. H. Hall and Dr. G. E. Munroe, who were summing at the hotel, and also by Professor Frank H. Hamilton, who was staying at a neighboring hotel. Two of the surgeons found from one half to two thirds of an inch shortening of the limb; the other, after repeated examinations, satisfied himself that there was no shortening.

There was no version of the limb, and the patient was able to invert the foot to a moderate degree; there was considerable pain in the right groin, and also in the trochanter. The pain in the trochanter was relieved instead of being increased by pressure. The skin was contused directly over the outer side of the trochanter, showing that the fracturing force was applied transversely to the axis of the neck of the femur. The absence of bruises at any other part of the surface proved that the trochanter had received the full force of the fall. No manipulation was made for the purpose of detecting crepitus and settling definitely the question of fracture. A positive diagnosis was not expressed at this time by the attending surgeons.

During the night the patient suffered greatly with pain about the upper part of the femur, which was aggravated by muscular spasms whenever he fell asleep. He was relieved in a great measure by lying upon the right trochanter, the pressure of the bed against it acting as a splint. He could not raise the heel from the bed, but was able to flex the thigh slightly upon the pelvis by bending the knee joint.

On the following morning Dr. Hamilton observed depression of the right trochanter, and an unnatural fullness in the inguinal region, which, with the development of muscular twitches during the night about the seat of injury, in addition to the signs previously mentioned, convinced him that there was an impacted extra-capsular fracture. Dr. Hamilton stated that he regarded muscular spasm in this region, after a recent injury, as generally pathognomonic of fracture of the cervix femoris—a statement which the writer does not remember to have seen mentioned by any author.

The patient was advised to get to his home, two hundred miles distant, as soon as possible. No apparatus was applied, because it would have increased the inconvenience of transportation, and the surgical knowledge of the patient would induce him to keep the limb quiet and in the best position to prevent separation of the fragments. Owing to the crowded state of the cars at that season of the year, great difficulty was experienced in securing proper transportation. Finally, by the unwearied exertions of a friend, a private car was obtained from a distant city, and the patient was conveyed to it from the hotel very comfortably on an improvised stretcher.

The transportation from the hotel to the city was under the direction, chiefly, of Dr. J. H. Sterling, of Brooklyn.

The stretcher was borne by six men, two others accompanying it as a relief. The patient turned himself upon his right side, so that the trochanter major was well pressed upon. The transportation to the car was comfortably made, and he was placed upon a spring mattress upon the floor. Soon after leaving Lake George, the car, which was the last on the train, bumped violently against the one in front, producing severe pain at the seat of fracture. A second bump took place with a like result, and then the superintendent had the car well manned with a hand-brake, which prevented any further concussion.

The patient slept moderately well during the remainder of the night, and reached the Forty-second Street depot at 7 A. M. the following morning, where he was met by an ambulance, which had been kindly furnished by the Brooklyn Health Department, and was conveyed to his residence. He was driven

* Read before the New York Surgical Society, November 11, 1884.

through New York and Brooklyn at a moderate pace, and expressed great satisfaction with his comfortable ambulance experience. He was strongly impressed with the superiority of this method of carrying the sick and injured over those formerly used. Before leaving the depot, a long splint was applied to the outer side of the injured limb, but the patient, finding it irksome, removed it and again turned over on his trochanter. On reaching home he was placed upon Hooper's invalids' bed, which he had purchased two years before in London, not with the expectation, however, that he would be the first to use it. He was then allowed to rest undisturbed until the afternoon, when Buck's dressing was applied by Dr. A. R. Paine, assisted by Dr. Rand. A ten-pound weight was used, not for extension, but to steady the limb and to relieve muscular spasm. This was soon reduced to seven pounds, with the addition of another pound at night. Lateral pressure was then made against the trochanter by means of a heavy bag of sand. This was suggested by the relief afforded the patient by lying on the trochanter before the leg was dressed. The pressure was kept up night and day for thirty-five days, and the patient was on the alert to have it closely applied, because it gave him great relief. During that night, and for three succeeding nights, the muscular twitches returned whenever he fell asleep, which gave him great pain at the seat of injury, lasting for half an hour. These spasms of pain were alleviated somewhat by fifteen drops of Magendie's solution of morphine at bedtime. On the third day after reaching home, five days after the accident, our patient requested Dr. W. S. Halsted to send him his modification of Volkmann's splint, which he intended to have applied if loosening of the fragments and eversion of the limb should take place. He believed that this apparatus would be more comfortable, if not more efficient, than the long external splint in controlling eversion. Dr. Halsted kindly brought the apparatus himself, and the patient and surgeon in charge acceded to his suggestion to apply it at once. As there was no separation or loosening of the fragments, and therefore no eversion of the foot, the only advantage that Halsted's splint had in this case over Buck's extension alone was that it enabled him to move more easily up and down in bed. Toward the end of the third week a marked, painless swelling, unmistakably callous, was noticed in the groin, just outside the femoral vessels, which disappeared in due time. On the fortieth day the dressings were removed; on the forty-second day the patient got out of bed and, by the aid of a chair, crossed the room to a lounge; on the following day he moved about on crutches, and on the eighty-fourth day he laid aside his cane. During the whole period of his confinement to bed all his functions were regularly and normally performed, and he felt perfectly well after the pain from the muscular twitches during the first week had subsided. Eleven months after the injury there is nothing to indicate that the patient has had a fracture of the thigh except the diminished prominence of the trochanter major, flattening of the corresponding side of the nates, and an unnatural fullness in the inguinal region; there is no limp, the motions of the joint are perfect, there are no osteophytes, and he exercises on horseback with as much pleasure and comfort as formerly.

It will be observed in the history of this case that two of the most important signs of fracture of the neck of the femur, whether impacted or not, were absent—viz.: pain on pressure over the trochanter, and eversion of the limb. Pressure against the trochanter major, instead of aggravating the pain, gave great relief, and, on that account, was constantly kept up; first, by lying upon the trochanter, and, after the apparatus was applied, by means of a large

sand-bag. There was absolutely no eversion, the position of the foot was normal, and the right foot can now be inverted and everted as far as the left.

Outward rotation of the limb, in impacted as well as other fractures of the cervix femoris, is the rule; but exceptional cases are recorded where the limb was inverted or the position of the foot was normal, turned neither in nor out. The position depends upon the direction of the fracturing force.

This fracture is produced, in a great majority of cases, by falling forward and on the side, striking the front and lateral aspects of the trochanter. The force applied in this direction would inevitably produce posterior impaction, and eversion as a consequence. But, if the force is received upon the outer and posterior aspect of the trochanter, the anterior wall will be impacted, and we shall have inversion of the limb. And when the fracturing force is applied directly upon the outer surface of the trochanter, in the direction of the axis of the neck, as in the case here reported, the whole base of the cervix is implanted into the trochanteric portion of the femur, and the limb will retain its natural position.

When we remember that inequality in the length of the lower extremities is often a normal condition (which may have existed in this case), that there was no pain on pressure over the trochanter, that the foot rested directly upon the heel, and that the recovery was so rapid and complete, the question may naturally arise, Was this a case of fracture, or was it an injury which did not involve the integrity of the bone? Every experienced surgeon is aware of the difficulties sometimes attending the diagnosis of fracture of the neck of the femur, especially when the upper fragment is firmly implanted into the cancellated tissue of the lower. A majority of the symptoms of fracture may be present in cases in which the neck of the femur is uninjured; and, on the other hand, fracture may be unaccompanied at first by the more important of the usual diagnostic signs. In cases of violent contusion of the periarticular muscles of the hip, all the component parts of the joint having received a severe shock—the result of a fall upon the trochanter—the symptoms are at first almost identical with fracture. In either case there may be eversion of the foot, shortening of the limb, which existed prior to the injury, an absence of crepitus, and an inability to raise the extended limb from the bed by a voluntary effort. In such a case, how are we enabled to ascertain the real nature of the injury?

This can generally be done by observing the relation which the trochanter major bears to the anterior-superior iliac spine. When the relative position is the same on each side, it usually indicates that there has been no other injury than contusion; but when it is altered, in a joint previously healthy, it denotes the presence of fracture.

A change in the normal relation of the two processes does not, however, always indicate the existence of fracture. A change in the position of the trochanter major, with reference to the iliac spine, may have been produced by chronic rheumatism of the hip joint. In such a case the bearings of the trochanter, with respect to the iliac spine, will not serve as a diagnostic mark between a contusion of the hip

and an impacted fracture of the neck of the femur. The previous history of the case will, however, assist in determining the nature of the lesion.

In investigating these injuries we should not form our opinions from any particular symptom, but all the symptoms which the case presents should be considered in order to arrive at a correct diagnosis.

In the case under consideration, the pathognomonic symptoms of fracture were:

1. Depression of the trochanter major on the injured side. This process was, according to the measurement of Dr. Halsted on the fifth day after the injury, three quarters of an inch nearer the iliac spine on the right than on the left side.

2. The spasms or twitchings in the muscles surrounding the joints during sleep, and continuing for five days.

3. The deposit of callus, toward the end of the third week, in the groin, on the outer side of the femoral vessels, and just below Poupert's ligament.

An interesting incident in the case was the variation in measurements by the three surgeons who first saw the patient—all men of large experience in the treatment of fractures. This is, I believe, not an uncommon experience. We can not always be sure that we have measured from exactly corresponding points on the anterior-superior spinous processes of the ilia.

Before getting out of bed, measurements were repeated by Dr. E. R. Squibb and Dr. A. R. Paine with great care. They found from a quarter to a third of an inch shortening. On June 14th the patient was measured by Professor Frank Hamilton, who found only one sixth of an inch shortening. He remarked that he had never before seen so good a result after such an injury.

The small amount of shortening indicated that the impaction was not deep, and yet it was enough, with intelligent care on the part of the patient, to prevent separation of the ends of the fragments. The diagnosis of fracture was sufficiently clear in this case without manipulation, but, had there been a reasonable doubt of the nature of the injury, violent manipulations would have been manifestly improper. The utmost caution was observed in examining the limb.

In any case of suspected impacted fracture of the cervix femoris the discreet surgeon will prefer to treat the case as one of fracture rather than incur the risk of damaging his patient by instituting such an examination as is necessary to produce crepitus. This rule should be observed even when the bone is not impacted in the best position. It is better that malposition of the limb should not be corrected than that impaction should be broken up by unwarrantable manipulation, and the union of the fragments thereby endangered. The most important feature in the treatment of such cases is, therefore, to maintain the impaction. This can be best accomplished by keeping the patient at rest, by avoiding undue manipulations, by moderate extension in the straight position to steady the limb, and by lateral pressure over the trochanter by means of a sand-bag, or a long external splint.

Violent extension would disengage and displace the im-

acted fragments, and make non-union almost inevitable. If, for any reason, it is necessary or desirable for the patient to get out before firm union of the fracture has taken place, this may be done with safety, at the end of the fifth week, by applying one of Johnson's felt splints, or some similar appliance, enveloping the body to midway between the hips and axilla, and the thigh and leg to midway between the knee and ankle. The felt is made pliable by holding it before a fire or immersing it in hot water, or, still better, by covering it with a wet cloth and softening it by a hot smoothing-iron. It is then applied over a tight-fitting pair of drawers and rapidly covered with a bandage. The splint adapts itself to all the inequalities of the surface, and, if well applied, does not make undue pressure at any point.

Our patient amused himself by applying this splint to the sound limb while in bed, and found that it made the joints absolutely immovable. The objection suggested to its use is the danger of disturbing the fragments during its application. It is much lighter than plaster-of-Paris bandages, can be applied with more facility, and with less danger of deranging the fragments. The rapid and perfect recovery were interesting features in this case, and were duly appreciated by the patient. He knew that a more perfect result would be obtained by establishing motion in the joint as speedily as practicable. He had never permitted a patient to get out of bed so soon, nor would he do so now, notwithstanding his own favorable experience, unless the patient were a cautious surgeon and fully appreciated all the circumstances of the case.

THE SURGICAL MANAGEMENT OF RHACHITIC DEFORMITIES OF THE LOWER EXTREMITIES.*

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It is my impression that the subject of osteotomy for genu valgum and genu varum has not been discussed in any of the New York societies except the Surgical. Certainly the Academy of Medicine has not contributed anything to science bearing upon the question, and I therefore ask no pardon for presenting this evening a paper on "The Surgical Management of Rhachitic Deformities of the Lower Extremities."

If my paper shall serve to bring out a discussion among men whose experience is large and valuable; if some, as yet, mooted points can be settled within this hall, so far as the weight of statistics and opinion can settle any point; if aught can be added, however small, to our stock of information on the subject of bow-legs, of knock-knee, and of other curves of the lower extremities—I shall feel that I have not written in vain.

By way of definition, let me state that in the employment of the term surgical management I wish to convey the impression that mechanical appliances as well as cutting

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instruments are surgical means for effecting relief. He who devises and applies apparatus to meet indications may be just as much a surgeon as he who wields the scalpel, the osteotome, and the mallet. It requires as much skill, aye, more skill, to make a simple fracture always at the epiphyseal line than to make a compound fracture at this point.

If, then, I speak of braces and splints and osteoclasis, do not think that I am digressing. All these belong to the armamentarium of the surgeon.

For the reason that a large proportion of bone-curves and epiphyseal changes in the lower extremities are found in children who have been or are rachitic, and for the reason that the surgical treatment is the same whether the curve is rachitic or otherwise, I have advisedly made use of the foregoing terms in the selection of my title.

Despite the teachings of gentlemen who practice osteotomy, the great bulk of the profession, I am convinced, hold to the opinion that every case of knock-knee or of bow-legs does not demand surgical interference. Exaggerated cases are known to recover spontaneously, and there are practitioners who believe this and discountenance the use of splints or the resort to operation.

Accordingly, I have thought it desirable to raise the question—

What cases can be safely left to nature?

When I have asserted that many children do recover from deformity without any treatment whatever, I am met with the reply, "They did not have true cases of knock-knee or of bow-legs." The term knock-knee is the vulgar name for entogonyancon (esogonyancon). Macewen gives genu valgum, or genu introrsum.

Dunglison—our American authority on definitions—gives entogonyancon (I hope I shall not have to use this term again!) as meaning "bending of the knees inward."

Dr. William J. Little employs the term "in-knee," and has written an excellent brochure on "In-Knee Deviation." He means a "distortion of the knee joint," and hence his definition includes many deformities we are loath to speak of as knock-knee.

Dr. William Macewen defines by describing in the following language: "In the normal limb, a line drawn from the head of the femur to the middle of the ankle joint passes through the center of the knee joint; in knock-knee the middle of the knee joint is thrown to the inner side of this line."

Dr. Poore, the most recent author, gives as definition: "A deformity at the knee joint in which a line drawn from the head of the femur to the middle of the ankle joint passes outside the center of the knee joint, and in which the internal malleoli can not be made to touch when the limbs are in an extended position."

In the next paragraph he modifies this by stating that "not all cases of in-knee are cases of true genu valgum." By this he excludes "spastic contraction," some cases of disease of the knee joint, etc. His definition does not include as much as Dr. Little's does.

However, it is well understood by practitioners what is meant by knock-knee, and, as my remarks just now concern the cases that recover spontaneously, there is no occasion

for including deformities due to the diseases I have mentioned.

Do any cases of knock-knee—true knock-knee—recover spontaneously?

It is my opinion—indeed my opinion takes the form of a strong conviction—that a fair proportion of the cases of knock-knee in children in the United States make a spontaneous recovery. Let me give my reasons:

1. From 1871 to 1877, inclusive, I saw, at the Hospital for the Ruptured and Crippled, two hundred and fifty-five cases of genu valgum in children under fourteen years of age.

This period antedated the advent of osteotomy as a means of redressing these deformities. This represents a period, too, in which the apparatus employed for relief was theoretically inoperative.

Practically it seemed to be of service. The patients wore the springs from six to eighteen months, and in many, yes, in nearly all, the limbs were restored to a normal condition. The construction of the appliance is as follows: Steel bars of medium strength extending along the outer sides of the limbs from foot-plate to pelvic-band with joints at the ankle, knee, and hip, permitting the fullest range of flexion and extension. Like bars along the inside, reaching from the ankle joint to the upper third of the thigh, and joined to the outer springs by means of semicircular steel bands at the upper extremity and at the calf. A joint at the knee, at which point a small pad was attached, not pressing firmly against the inner condyle. Both these springs were attached at the ankle to a foot-piece which was worn within the shoe. We had, then, a pair of springs simply supporting the limbs without exerting any force against the deformity.

Since 1877 these springs have been modified by dispensing with the perineal band, and by attaching a pad at the upper end of each outer vertical bar, which pad presses against the trochanter, while force is employed against the inner side of the knee by means of a strong canvas band fastened to the outer bar and laced over the limb firmly in front.

Theoretically we have now a force acting continuously against the apex of the angle formed by the leg and thigh. And yet I do not believe that the percentage of cures is greater now than it was prior to these changes in the apparatus employed. On more than one occasion I have applied a good-fitting pair of springs in a typical case, to learn, a year or two subsequently, that they were discarded within a week, and to find the limbs straight.

Another reason for believing that spontaneous cures frequently take place is the scarcity of adult cases in this city. Comparatively few patients over ten years of age are presented for treatment, and it is seldom that one sees on our streets, go into what ward one may, an adult with this deformity.

Two years ago, while visiting nearly every part of the city in quest of old hip cases, I seldom saw a case of knock-knees in any but young children.

My own observations, I am confident, will be confirmed by the major portion of my audience. Without resorting

to statistics, I feel safe in asserting that the larger number of cases in which osteotomy has been performed, in this country at least, have been in children from three to eight years of age.

During the period I have named—viz.: from 1871 to 1877—I saw only eighteen cases in patients between fourteen and twenty-one years, and only three in patients over twenty-one years of age. Of the whole number (two hundred and seventy-six) treated, it will be seen that two hundred and fifty-five were in children under fourteen years of age. The yearly reports give fifteen of the entire number (two hundred and seventy-six) as not cured, and, on closer study, I find that this fifteen occurred in the twenty-one over fourteen years of age. Lest some one may get the impression that I assert that not one out of the two hundred and fifty-five failed to recover, I will correct the impression by stating that none were recorded as unrelieved. Statistics of dispensary cases not traced for final results are sometimes peculiarly misleading. Because a patient does not return, it does not follow, by any system of reasoning, that a cure has taken place.

This question might, however, be a pertinent one: If these patients were not restored, why do we not find many now further advanced in life presenting genu valgum?

I am therefore all the more willing to accept the statement of family practitioners that many cases of genu valgum do recover spontaneously.

Take, again, bow-legs. I am sure that many gentlemen present this evening can tell us of children whose limbs were bowed, but are now straight, without any treatment.

During the seven years immediately preceding the introduction of osteotomy for this deformity—from 1871 to 1877—I saw at the hospital one thousand and five cases of bow-legs, nine hundred and ninety-seven of which were in children under fourteen years of age. I saw only three in adults, and only five in patients from fourteen to twenty-one years of age. Many—the large proportion of the nine hundred and ninety-seven—came under treatment, and a good proportion never carried out the same. As a matter of clinical fact, their ages ranged from two to four years. Either the apparatus was very efficient, or the limbs became straight. These patients should now range from seven to ten years of age, and I think it would to-day be an unenviable task to find half as many bow-legged children between seven and ten years of age. I think I shall not be corrected if I say that the great majority of patients operated upon in this city since 1879 have been under seven years of age. Among our own people bow-legs in adults are very rare. Occasionally one does find a case in a half-grown boy or girl.

The question, then, What cases can safely be left to nature? becomes very pertinent.

1. Children under two years of age presenting bow-legs or knock-knees should not, I think, be subjected to operation or to mechanical treatment unless the deformity is very exaggerated.

2. Children under three years of age with only a moderate degree of deformity can, in my opinion, be safely left to nature. My plan is to take the outline of the deformity

on a page of my record-book; then with my hands I learn the strength of the bones, determining the springiness of the limbs. If I find the deformity slight, my advice is to defer mechanical treatment, and to bring the patient in a month or two for observation. It is seldom that I find occasion, by comparison of tracings from time to time, to employ apparatus.

In bow-legs we have often a general curve extending from the perinæum to the ankle without any sharp deviations whatever, and again there are many where the tibia and fibula are sharply curved at the junction of the middle with the lower third of the leg. In the former I rarely find it necessary to employ any form of apparatus; in the latter I rarely omit to order apparatus. In the former, nature, according to my observation, corrects the deformity so thoroughly that one can not find traces of the original deviation; in the latter, if treatment is rejected, the curve nearly always remains, and, as the child grows in height, the curve becomes longer and hence less conspicuous.

Knock-knee and bow-legs being more or less due to rhachitis, we naturally expect medication and hygiene to play a leading part in therapeutics. The general practitioner treats his cases in this way so long as the deformity is not too glaring. Rickets, being a malnutrition, calls for such drugs as will assist the digestive powers and such hygienic measures as will contribute to this end. The fact that these deformities are more common in the crowded districts of large cities furnishes an indication for rational treatment.

I know of many cases without marked bony changes cured during a season in the country. Knock-knee where it is difficult to find any antero-lateral curvature in the femora, any abnormal elongation of the internal condyle, or any elongation of the inner head of the tibia, is often corrected in apparently shorter time. Bow-legs without sharp curves in the lower third of the leg sometimes disappear completely during a sojourn in the country. A few years ago, in a discussion on rickets at the County Medical Society, I heard a distinguished surgeon from the Southwest say that there were no bow-legs in his section of the country.

The phosphates of lime and sodium are thought to have a specific action on the bony structure, and are largely administered. I have used them long and persistently, and am satisfied that their only action is on the digestion. Cod-liver oil need only be mentioned, as all men recognize this nutrient as of inestimable value.

It has been my custom to employ manual force in the correction of these rhachitic deformities under the following circumstances:

1. In patients whose parents were unable to buy apparatus and too improvident to give any attention to its care.
2. Where one has little time in which to effect a cure.
3. In cases where the bones will thus yield to such force, the other two conditions being present.

Let the following case serve as an illustration:

Last May an Italian woman, accompanied by an interpreter, brought a female child, aged four years, to my clinic, and the limbs were thus deformed:

1. Both humeri were curved forward and laterally at about the junction of the upper and middle thirds.

2. The bones of the forearm, on both sides, were bowed outward near the middle.

3. The femora presented an antero-lateral curvature near the middle, and the deformity gave rise to a marked genu valgum.

4. Both legs were bowed in the lower third, the curve being quite sharp.

In addition to the deformities already named, the spinal column presented a marked kyphosis, which disappeared on traction.

The child was eminently rachitic, and, being four years of age, demanded some surgical means of relief. The patient's address was given as in the Italian quarter in Baxter Street. Had I wished to employ apparatus, I saw no way of securing it, were it ever so inexpensive. The bones, I found, would yield considerably when I tested them with my hands.

Accordingly, on the 17th of May, at the Polyclinic, I easily made simple fracture under chloroform, with manual force, of the following bones: Tibia and fibula, on both sides; both femora; radius and ulna on the right side. Green-stick fractures were made of the right humerus, left humerus, and radius and ulna on left side. The whole operation occupied about ten minutes. Bored cotton was applied smoothly about the limbs after the deformity was corrected, and plaster-of-Paris bandages served as retentive splints. I ordered an opiate, and the child was banded up well and taken home late in the afternoon. Next day Dr. Thomas Stone, of my clinical staff, went to the address in Baxter Street and learned that the child lived in New Jersey, whence it had been taken early that morning. On the second day he succeeded in finding the family, and, barring a little oedema of the hands and feet, the case was doing surprisingly well. The rectal temperature was 98°6'.

On the seventh day I removed the plaster dressings from the lower limbs for inspection, and found the deformity not entirely overcome on the right side, while that of the left side had entirely disappeared. It required very little force to straighten the right limb. Fresh plaster was applied, and on the 21st of June all dressings were removed. During all this time, and subsequently, cod-liver oil and the compound syrup of hypophosphites were administered at the usual intervals. The child grew fat, and continues under observation, but at present I find that the thighs in their upper portion present quite a sharp antero-lateral curvature, and the arms present a moderate degree of deformity. My error was in not carrying my splints above the hips. I have accordingly had made a very simple modification of the wire cuirass—viz.: a double hip-splint, originating in the Boston hospitals—and I propose to correct the deformity of the thighs again, and retain the good position secured.

During the summer I also corrected, by manual force, a case of bow-legs in a two-and-a-half-year-old child at the Nursery and Child's Hospital. In this case the deformity was in the lower third of the leg, and it was important to afford relief in less time than splints would require.

(To be concluded.)

The American Rhinological Association.—At the recent annual meeting, the following-named gentlemen were elected officers for the coming year: Dr. P. W. Logan, of Knoxville, Tenn., president; Dr. Allen De Vilbiss, of Fort Wayne, Ind., first vice-president; Dr. J. A. Stucky, of Lexington, Ky., second vice-president; Dr. Charles A. S. Sims, of St. Joseph, Mo., secretary and treasurer.

THE HYDROCHLORATE OF COCAINE

AS A

LOCAL ANÆSTHETIC IN OPHTHALMIC SURGERY.*

By CHARLES STEDMAN BULL, M. D.

THERE has very recently been brought to our knowledge a new local anæsthetic agent, the hydrochlorate of cocaine, which within certain limits has proved of very great value in ophthalmic surgery. Our first knowledge of the effects of the drug on this side of the Atlantic came in a letter from Dr. H. D. Noyes, of this city, to Dr. E. R. Squibb, of Brooklyn, and dated Kreuznach, September 19th. An open letter from Dr. Noyes to the "Medical Record," dated September 19th, from Heidelberg, was published in the issue of the "Record" of October 11, 1884. In this letter he describes the effects of the drug upon the cornea and conjunctiva of patients, as demonstrated at the Heidelberg Ophthalmological Congress in September last. It is not the intention of the writer of this paper to discuss the origin, nature, or physiological properties of the drug, except from a clinical standpoint. Let it suffice to say that cocaine is the alkaloid made from the leaves of *Erythroxylon coca*, a shrub which grows wild and is extensively cultivated in certain portions of South America. The leaves resemble those of the Chinese tea-plant, and have been used for a great many years as a nerve stimulant by the natives of Peru and Bolivia, especially by those dwelling upon the slopes of the Andes. The alkaloid was first isolated in 1855, but its physiological properties were not thoroughly analyzed until Lössen investigated the subject in 1860 or 1861. The value of its anæsthetic properties was not recognized in ophthalmic therapeutics until the present summer, when a young medical student named Koller, at Vienna, having seen its beneficial anæsthetic effects upon the sensitive mucous membrane of the larynx, applied it to the eye and produced a superficial transient but complete anæsthesia of the cornea and conjunctiva. He brought it to the notice of Dr. Brettauer, a well-known ophthalmic surgeon of Trieste, who communicated it to the Ophthalmological Congress at Heidelberg. Through the kindness of Dr. E. R. Squibb, of Brooklyn, the writer was furnished, on October 7th, with a small supply of a two-per-cent. and a four-per-cent. solution of the salt, made from Merck's crystals, and all the physiological experiments which form the basis of this paper were made with these preparations. These experiments may be classed under three heads: 1. Experiments as to the anæsthetic effects of the drug on the sensory nerves of the cornea and conjunctiva; 2. Experiments on the pupil; 3. Experiments on the accommodation.

The drug was for the first time employed in this country as a local anæsthetic on the eye by the writer, on October 8th, in his office, for the removal of a cinder from the cornea.

1. The effects of the drug in producing anæsthesia of the cornea and conjunctiva are complete and positive, though the diminution of sensibility varies in different persons.

* Read before the New York State Medical Association, November 19, 1884.

The writer has used the drug in more than one hundred and fifty cases, and has succeeded in producing complete anaesthesia in all but three cases, while in these three cases the sensibility was decidedly diminished. When a two-per-cent. solution is used, the diminution of sensibility begins within the first three minutes after the first instillation, and the anaesthesia is complete within fifteen minutes, and usually within ten minutes. It begins to diminish in about twenty minutes, and has disappeared in from thirty to thirty-five minutes. If a second instillation is made, the anaesthesia comes on more rapidly and lasts longer, sometimes extending over an hour. When a four-per-cent. solution is used, the diminution of sensibility begins sometimes within the first minute, the anaesthesia becomes absolute within ten minutes, and, if a second instillation is employed within two or three minutes of the first instillation, the anaesthesia is complete within five or six minutes, as may be shown by rubbing the point of a probe over the cornea and conjunctiva. The instillation of neither of these solutions produces the slightest pain or discomfort, nor does it leave any lasting effects. There is no change produced in the appearance of the cornea or conjunctiva, nor is there any ophthalmoscopic evidence of any effect produced upon the intra-ocular circulation. The question whether the anaesthesia extends more deeply and affects the deeper tissues of the eye will be answered when we come to discuss its usefulness in ophthalmic surgery.

2. The effects upon the pupil. The mydriatic effect of cocaine appears much more slowly than that of atropine, and disappears more rapidly. The pupil usually begins to dilate within fifteen minutes after the instillation of a two-per-cent. solution, and within eight minutes after the instillation of a four-per-cent. solution. It increases slowly in size—in some cases very slowly; reaches its maximum in from thirty-five to forty-five minutes and then slowly diminishes, its contraction being much slower than its dilatation. In no case has the writer seen the pupil become as dilated under its use as it does from atropine, even when a four-per-cent. solution has been used. In some cases there was still a trace of dilatation on the day following the experiment. In one case no dilatation of the pupil was produced after repeated instillations of the stronger solution, though atropine acted promptly on this patient.

3. The effects upon the accommodation. The results here are, to the mind of the writer, still unsatisfactory, and require further careful observation. The range of accommodation is shortened, and the near-point does recede from the eye, even when a two-per-cent. solution is used. In the person of the writer, whose refraction is myopic, the shortening of the range of accommodation was equal to about D. 5, which came on within twenty minutes after one instillation of a four-per-cent. solution. In most of the cases in which this effect was noted the recession of the near-point began within twenty minutes after the instillation, continued to increase during fifteen or twenty minutes, and then almost immediately began to diminish, and within an hour and a half the range of accommodation was again normal. The effects of the drug are thus seen to be less marked and more transient on the ciliary muscle than on the

iris. The degree to which the accommodation was affected varied very much in different patients. Hence these observations upon the effects of cocaine on the accommodation need to be carefully repeated on a much larger number of patients before satisfactory conclusions on this head can be reached. In no case was there complete paralysis of accommodation produced.

We now come to the most important point for ophthalmic surgeons—viz., the usefulness of the drug as a local anæsthetic in operations upon the eye. The points to be settled are two: 1. Are the anæsthetic effects of the drug, when dropped upon the cornea and into the conjunctival *cul-de-sac*, merely superficial, involving only the surfaces of these membranes, or do they extend through the coats of the eyeball, merely requiring more time to produce their effects. 2. If the former, can these effects be made to extend more deeply by injecting a few drops of the solution within the cornea or beneath the conjunctiva? The writer believes that the drug is absorbed, and that osmosis does occur, but very slowly and unsatisfactorily, even when a strong solution is employed, and the anæsthetic effect upon the iris and deeper tissues of the eye is but slightly marked. But the anaesthesia of these highly sensitive membranes may be readily produced, in cases where it is necessary, by instilling a drop or two of the solution into the anterior chamber through the wound, and an operation for squint may be made absolutely painless by injecting a few drops through the conjunctival wound into the sheath of the tendon. The following *résumé* of a number of cases in which the cocaine was instilled, preliminary to operation, will give a clear idea of the extent to which it may be employed in ophthalmic surgery, and what are the limits of its usefulness.

I.—The first case in which the writer employed the drug was a bad case of abscess of the cornea, with iritis and hypopyon, occurring in an enfeebled woman aged fifty-four. Sæmisch's operation of splitting the cornea was necessary, and, after two instillations of two drops of a two-per-cent. solution, with an interval of ten minutes between them, the conjunctiva was seized with the forceps and the cornea split transversely just below the horizontal meridian, without causing the slightest pain.

II.—A case of kerato-iritis with hypopyon, occurring in a man aged thirty-five. After two instillations of a two-per-cent. solution, with an interval of eight minutes between them, the anterior chamber was opened below by a broad paracentesis through the cornea, made with a lance-knife, and the pus was evacuated, without causing the patient any pain.

III.—A case of convergent squint with hypermetropia, occurring in a young girl aged seventeen, in which it was necessary to divide both internal recti muscles simultaneously. Two drops of a two-per-cent. solution were instilled into each eye, and, after an interval of five minutes, two drops more were used. After a second interval of five minutes the conjunctiva was seized over the insertion of the right internal rectus and divided *painlessly*; but the moment an attempt was made to open the sheath of the tendon the patient winced and cried out, and expressions of pain continued for some time after the tendon was divided. In the left eye, after the conjunctiva was opened, two drops of the same solution were instilled beneath the conjunctiva, and, five minutes later, two drops more; and within ten minutes the internal rectus muscle of this eye was divided absolutely painlessly.

IV.—A case of leucoma corneæ, in a man aged eighteen, where it was necessary to perform an iridectomy for optical purposes. After the usual double instillation of a two-per-cent. solution there was complete anæsthesia of the cornea and conjunctiva, and the preliminary incision was made through the sclero-corneal margin on the nasal side *without pain*. The moment, however, the iris was seized with the forceps, the patient complained of the pain, and continued to do so until after the operation was completed. This showed that the anæsthetic effect of a two-per-cent. solution, instilled in the manner described, had not at that time extended to the iris.

V.—A case of simple chronic glaucoma in one eye, with absolute glaucoma and cataract in the other eye, occurring in a woman aged fifty-five. A two-per-cent. solution was instilled once into the first eye, and after five minutes a second time. In ten minutes after the first instillation complete anæsthesia of the cornea. The preliminary incision was made in the limbus upward with a broad lance-knife. Then two drops of the same solution were dropped through the wound into the anterior chamber, and in ten minutes a broad iridectomy was completed without the slightest sensation of pain being felt by the patient.

VI.—A case of ordinary senile cataract, occurring in a man aged fifty-six, in whom a preliminary iridectomy with massage of the cornea, known as Förster's operation for maturing cataract, had previously been done. A two-per-cent. solution was used in the ordinary manner, with complete anæsthesia of the cornea in ten minutes, and peripheral incision, quadrilateral capsulotomy, and extraction of the cataract, with ease and entire absence of pain.

VII.—A case of senile cataract, occurring in a man aged seventy-four, of excessively nervous temperament and gouty constitution. In this case a four-per-cent. solution was used, and in twelve minutes the peripheral incision, iridectomy, capsulotomy, and extraction of the cataract were all done painlessly.

VIII.—Another case of cataract, occurring in an old woman aged eighty-two. Here a preliminary iridectomy with massage of the cornea was done within fourteen minutes after the first instillation, and within six minutes of the instillation of a four-per-cent. solution within the anterior chamber.

IX.—A case of retention-cyst of the ocular conjunctiva, occurring in an elderly woman. It was as large as a Lima-bean, and hung down from the upper *cul-de-sac* over the eyeball. A two-per-cent. solution was instilled twice, and within twelve minutes the cyst was slit up, its contents evacuated with the spoon, and its inner surface cauterized with tincture of iodine—all painlessly.

X.—A case of mucocele with stricture of the nasal duct of long standing, occurring in a woman aged thirty-four. A four-per-cent. solution was instilled through the lachrymal punctum, and in eight minutes the canaliculus was slit and the sac opened, and contents evacuated. Two drops of a four-per-cent. solution were then dropped into the duct through the opening in the lachrymal sac, and in ten minutes the stricture was thoroughly divided with a Stilling's knife, and a large-sized Theobald's probe introduced—all painlessly.

It may thus be seen that almost all the various operations done upon the eyeball and inner surface of the eyelids, and on the tear-passages, may be performed painlessly under the anæsthetic influence of cocaine. The only operation on the eyeball in which it may not answer its purpose is that of enucleation; and even in such an operation, excessively painful as it is from the large number of the ciliary nerves involved, it may be possible, by a careful injection of a four-

per-cent. solution beneath the conjunctiva and within the fibrous capsule of the eyeball, to bring about anæsthesia even of these deeper nerves, and thus make the operation a painless one. Looked at even from the most unsatisfactory standpoint, and without the glamour of a very excusable enthusiasm, the drug is a most valuable addition to the resources of ophthalmic surgeons, and relieves us, to a marked degree, from the thralldom of ether and chloroform. It may seem strange to the older members of the profession to hear such an expression as "relief from the thralldom of ether and chloroform," as scarcely forty years have elapsed since Morton first employed ether to relieve the pain of any operation. But to the ophthalmic surgeon the time necessarily occupied in complete etherization, the enormous engorgement of the ocular blood-vessels produced by the ether, the danger of vomiting which may occur at any stage of an operation, and the fact that almost any apparatus for producing anæsthesia by inhalation is in the way of the operator upon the eye, are all such serious objections that *any* degree of enthusiasm in the interests of a drug which certainly releases us from such a thralldom may well be pardoned. In plastic operations about the eyelids the drug has not been tried, and, owing to its very slight effect in diminishing the sensibility of the skin, it would probably prove of little avail. A four-per-cent. solution has proved very useful in the writer's hands in certain operations upon the membrana tympani and middle ear. Paracentesis of the drum-membrane has been performed three times with entire absence of pain. In one case of exuberant granulations springing from the external surface of the drum-membrane and the auditory canal in the immediate vicinity, after one instillation of a four-per-cent. solution, these granulations were removed with a sharp scoop without causing any pain.

The action of the drug upon the swollen mucous membrane covering the nasal septum and turbinated bones, in cases of acute coryza, is very marked. The writer has used it in his own person, when suffering an attack of acute naso-pharyngeal catarrh, with almost complete occlusion of both nostrils. A probe covered with cotton was dipped into a four-per-cent. solution, and the entire surface of the septum and turbinated bones, as far as could be reached anteriorly, was painted with the solution. The same was also applied on a brush through the mouth to the posterior nares, and with such effect that in less than ten minutes both nostrils were entirely free, and remained so for about five hours. The swelling then returned, but to a less degree.

47 EAST TWENTY-THIRD STREET.

EULACHON OIL.

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EULACHON, or "candle-fish" oil, which is said to have a local reputation about British Columbia as an efficient medicinal agent in the treatment of pithisis and other wasting diseases, bids fair, according to my limited experience with it, to become a rival of that well-established remedy, cod-liver oil. For a description of its physical and chemi-

cal properties I will refer the reader to the clear, able article of Dr. A. B. Lyons, which was published in the "Therapeutic Gazette" for September, 1884. It seems from this report that, while eulachon oil, in many particulars, resembles closely cod-liver and other fish-oils, it contains besides a substance—analogueous to paraffin—which is not found in cod-liver oil. Whether or not this substance gives the remedy a particular advantage over the other agents of its class is yet a matter of conjecture. I have been using it since about last July with very good results in twelve cases of phthisis pulmonalis of different sorts. Seven of these were hospital cases (at St. Mary's), and five were cases in private practice.

CASE I was ordinary chronic phthisis, well into the third stage. The patient had been unable to take cod-liver oil even in small doses, excepting in an emulsion; but could retain, without any difficulty, two or three teaspoonfuls of eulachon oil, two or three times a day, administered in a little whisky. The disease, however, progressed, and no signal result was noticed excepting the ability of the patient to retain the oil, and digest it.

CASE II was a well-advanced case of "grinder's phthisis," in which there was considerable consolidation in both lungs, with marked hectic fever, abundant expectoration, and rapidly progressing emaciation. Hemoptysis on April 24th to 26th, 1884. At first the eulachon oil was not retained, but, after two or three trials, there was no difficulty experienced, and the patient has been taking it since the 19th of last July, and is evidently holding his own very well, since the pulmonary tissue is not much broken down, and he thinks of resuming work. He has no hectic fever now.

CASE III was local tuberculosis of the right lung in a decorator, who had been affected for about eighteen months (following a pneumonia) with progressive emaciation; a moderate hectic fever; expectoration not very abundant; and general strength gradually declining. The eulachon oil was commenced with this patient the latter part of July, and he has been taking it since, together with tonic treatment, on and off, up to this time, with no apparent disturbance of the stomach or bowels. The temperature is still above normal, digestion is good, and the patient's strength has not declined during the last month. Nocturnal sweating is only occasional, whereas in August it was almost constant.

CASE IV was a case of bronchial phthisis of eighteen months' duration. Considerable febrile movement at night only; occasional nocturnal sweating; considerable thickening of the peribronchial tissue in both lungs; and occasional hæmorrhages. The patient had been treated with cod-liver oil before coming to the hospital, and avowed his inability to take anything of the sort. The eulachon oil was administered, first in half-teaspoonful doses, the patient having been assured that it was not cod-liver oil, and the dose gradually increased to a tablespoonful three times a day, which he has taken up to this time, with occasional doses of cinchonidine and anodynes to allay cough. Up to the 20th of October, when last seen, he had gained three pounds in weight since August 2d, experienced no difficulty in retaining the oil, and is apparently improving.

CASE V.—A machinist, who had resided up to last July in Connecticut, had been affected with cough for the last two years, and for the last nine months had rapidly declined in strength, and suffered from hæmoptysis and hectic fever. By two or three physicians at his home was advised to go to Colorado as the only chance for life. Having some relatives here, he stopped on his way, and was induced to seek advice at St. Mary's Hospital. He was very much emaciated when he pre-

sented himself in May, his pulse being very rapid, hectic fever marked, expectoration profuse, with almost constant nocturnal sweating. Has had three attacks of hæmoptysis; the last one on July 14th. Said he had taken cod-liver oil, malt, etc., before coming here, but could not take the oil more than a week or two at a time. It was found, upon close questioning, however, than oftentimes the oil was rejected, because of being taken at improper times, and on account of severe fits of coughing. This patient was treated by the administration of cod-liver oil emulsion, malt, compound syrup of the hypophosphites, etc., with no improvement up to August 15th, since which time he has steadily taken eulachon oil together with compound tincture of gentian and Fowler's solution of arsenic, until September 5th, when the gentian and Fowler's solution were stopped, and he has taken nothing but eulachon oil since (about four tablespoonfuls daily). Up to October 1st there seemed to be very little improvement in his condition; but since then he has rapidly improved, expectoration and febrile movement diminishing, no nocturnal sweating, no derangement of the bowels, and from October 10th to November 5th he has gained four pounds in weight.

CASE VI was a case of incipient phthisis of three months' duration. Very decided apex catarrh of the left side, incessant cough, great disturbance of the stomach. Gastric irritability was so great from coughing that food was often ejected. Emaciation taking place quite rapidly, but febrile movement not proportionately strong. This patient had tried cod-liver oil, but it would not digest. Eulachon oil was administered about the 15th of September, but met the same fate that had attended the ingestion of cod-liver oil. It was rejected sometimes immediately, and sometimes in the course of half an hour. It was now stopped entirely for a period of a week or two, when anodynes, malt, and stomachic tonics were prescribed. At the end of this time a 25-per-cent. emulsion of eulachon oil was administered. This, however, while it did not seem to digest, was not rejected by the stomach. Its administration was suspended for a few days again, and the stomachic tonics were resumed. In October the emulsion was again administered, and with success. For the last two weeks the patient has been taking a 50-per-cent. emulsion, with marked benefit.

CASE VII.—A case of acute phthisis. Extensive tuberculous deposit in the upper lobe of the left lung, and some at the apex of the right. Two or three small cavities. Constitutional symptoms—such as hectic fever, nocturnal sweating, rapid pulse, etc.—quite strong. Besides this, a persistent diarrhœa. With this patient cod-liver oil increased the bodily temperature, and increased the diarrhœa and anorexia, whether given pure or in emulsion. After treatment by very mild tonics, bismuth, and preparations of extracts of malt, covering a period of two weeks, a 25-per-cent. emulsion of eulachon oil was administered. This at first did not seem to agree with the stomach (although there was no increase of diarrhœa), and fishy eructations were complained of by the patient. It was now administered, and each dose followed immediately by five grains of bicarbonate of sodium, when, after a day or two, the patient was enabled to take the emulsion without complaining of disagreeable eructations. No extra disturbance of the bowels was noticed until an attempt was made to give a 50-per-cent. emulsion. However, by an occasional administration of an opiate, he was enabled to take a 35-per-cent. emulsion, which apparently agreed with him nicely, and he seemed to more than hold his own. As I have not seen him since October 25th, on account of his removal from the city, I do not know the further progress of the case. The case, nevertheless, illustrates the good effect of the oil regarding the disordered alimentary tract.

In the five cases in private practice an attempt was made to

administer the *pure oil*; but in two of the cases it was found impossible, and in one it could only be administered in the form of emulsion; while in the other one it could not be administered at all in any form, as the most persistent effort on the part of the patient as well as myself demonstrated. Of the remaining three cases, one was a case of grinder's phthisis, in a man forty-six years old, in whom an apparent arrest of the disease had taken place a year ago; but a renewal of activity began last June, when circumscribed inflammation, resulting in abscesses, very speedily followed, with consequent emaciation, hæmoptysis, and hectic fever. At the time of beginning the administration of eulachon oil, in September, the patient was confined to his house; very much emaciated; constant elevation of temperature— 101° to 103° F.; expectoration of a very large amount of sputum more or less mixed with blood; anorexia, nocturnal sweating, persistent cough, and troublesome diarrhœa. An attempt to administer the pure oil at first failed, but, after persisting for two or three days, he was able to retain and digest it. He has been taking three tablespoonfuls and a half daily since October 12th. He is now improving quite rapidly, and walks out a little every day. Besides this treatment, he has been taking tannate of quinine, with opiates, on and off, for the relief of diarrhœa, and balsamic inhalations, but at no time did I discover that the ingestion of the oil increased the alvine evacuations.

The fourth case was one of ordinary phthisis, in a female, in the second stage of its development, which seems to be doing well. She has taken the oil since about the 3d of August with very little intermission; and, although she has not gained in weight, she has only occasional hectic fever, and is able to attend to her household duties daily.

The fifth is a case of phthisis in its early stage, with a small deposit of tubercle at the apex of the right lung. Dyspeptic symptoms quite marked; bowels constipated. An evening temperature generally of 102° ; quite anæmic. This patient has been taking a 50-per-cent. emulsion of eulachon oil since the latter part of September, and no disagreeable effects follow its administration. No other medicine has been administered excepting a cough syrup consisting of codeine and syrup of tolu. No softening of the patch has yet taken place, as shown by physical exploration of the chest made a week ago. No difficulty in digesting the oil is experienced. Neither has the patient any relaxation of the bowels, excepting occasionally from eating fruit. The body-weight has increased two pounds since the beginning of the administration of the oil.

The foregoing summary seems to me to point out the fact that eulachon oil is certainly not inferior to cod-liver oil in the general run of cases. Of course, there are some patients with whom the administration of any oily substance is impossible. But, if this fish-oil proves to be more digestible and agreeable than the time-honored cod-liver oil, it should certainly receive favor on that account.

The results above given might possibly have been accomplished by cod-liver oil, but in most of the patients with whom this remedy was used it was ascertained that cod-liver oil had been administered, more or less previously. While, therefore, one would not claim, from this limited experience, that the eulachon oil is in any way a *specific* against phthisis pulmonalis, I think, however, that the clinical trial given it fairly shows its superiority in digestibility over cod-liver oil. In only one of the cases did I find that eulachon oil really produced diarrhœa, while cod-liver oil (as the majority of the profession will testify) is very prone (when used to any

extent) to cause this harassing and sometimes grave complication. Indeed, of late years, on this account, as well as because of its taste, I have used far less cod-liver oil than I did formerly, and find myself gradually coming to abandon it.

Emulsions of this oil may be made in the same way as emulsions of cod-liver oil. I generally prefer a flavoring of almond oil, with either cinnamon, wintergreen, or peppermint. The question of price is something important for the physician to consider; for any comparatively new remedy is apt to be high-priced; but I understand this oil will probably be furnished to the market as cheap at least as cod-liver oil, and perhaps cheaper. If this is so, it seems to me that its less disagreeable properties, and its equally good, if not much better, therapeutic value, will give it a great advantage over cod-liver oil, which has held for so many years such a prominent place in the physician's armamentarium.

25 WASHINGTON AVE., DETROIT, MICH.

Book Notices.

BOOKS AND PAMPHLETS RECEIVED.

A Theoretical and Practical Treatise on the Hemorrhoidal Disease; giving its History, Nature, Causes, Pathology, Diagnosis, and Treatment. By William Bodenhamer, A. M., M. D. Illustrated by Two Chromo-lithographic Plates and Thirty-one Woodcuts. New York: William Wood & Co., 1884. Pp. xviii-297. [Price, \$3.]

Comparative Physiology and Psychology. A Discussion of the Evolution and Relations of the Mind and Body of Man and Animals. By S. V. Clevenger, M. D., Special Pathologist, County Insane Asylum, Chicago, etc. Chicago: Jansen, McClurg & Co., 1885. Pp. vi-247-x. [Price, \$2.]

Lectures on some Important Points connected with the Surgery of the Urinary Organs. Delivered in the Royal College of Surgeons, London, by Sir Henry Thompson, F. R. C. S., M. B. Lond., Surgeon Extraordinary to H. M. the King of the Belgians, etc. Philadelphia: P. Blakiston, Son & Co., 1884. Pp. iv-147. [Price, \$1.25.]

Doctrines of the Circulation. A History of Physiological Opinion and Discovery in regard to the Circulation of the Blood. By J. C. Dalton, M. D., Professor Emeritus of Physiology in the College of Physicians and Surgeons, New York, etc. Philadelphia: Henry C. Lea's Son & Co., 1884. Pp. 296.

Obstetric Aphorisms for the Use of Students commencing Midwifery Practice. By Joseph Griffiths Swayne, M. D., Consulting Physician Accoucheur to the Bristol General Hospital etc. Eighth Edition. Philadelphia: P. Blakiston, Son & Co., 1884. Pp. viii-156. [Price, \$1.25.]

The Physician's Visiting List (Lindsay & Blakiston's) for 1885. Philadelphia: P. Blakiston, Son & Co.

Fourth Annual Report of the State Board of Health of New York.

Transactions of the Medical Society of the State of New York for the Year 1884.

Hair Microscopically Examined and Medico-legally Considered. By William J. Lewis, M. D., F. R. M. S., Hartford, Conn. [Reprint from the "Proceedings of the American Society of Microscopists."]

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THE ANATOMICAL MUSEUM AS AN ELEMENT IN MEDICAL
EDUCATION.

It is generally believed that no amount of demonstration can ever impart to the student as much anatomical knowledge as he acquires by his own work in the dissecting-room. This is true for a certain class of students, and to a limited extent, but we venture to state that, as dissecting is ordinarily conducted in this country, it oftener becomes a stumbling-block than an assistance to the beginner. We would not be understood as assuming a critical attitude toward any school or system of instruction, but we simply proceed on the principle that, when anything can be learned from foreign methods of teaching, it is unwise to reject the example merely because it is foreign. Professor Wilder struck the keynote of the matter, in his Cartwright Lectures, when, speaking of the prevailing ignorance as to methods of studying the human brain, he asked, "Has it never resulted that the principal acquisition of the students has been a profound conviction of the self-confidence of the demonstrator?"

There is reason to think that the ordinary purpose of the medical student, when he takes his scalpel in hand, is either to get through with his "part" in the shortest time possible, or, with more praiseworthy zeal, to make a pretty dissection. The ultimate object of his work, the acquiring of an exact knowledge of anatomy, is entirely lost sight of by all but a small minority. A student who does not finish his "part" in a week is apt to be regarded as wanting in thirst for anatomical lore. This state of things being apparently inevitable under the system now in vogue among us—a system which limits the demonstrator's work to a mere perfunctory discharge of his duties—it remains to be asked whether the ample material which we have can not be turned to account in some other way, so that the student who can not or will not work for himself may enjoy the results of another's skill and experience. There is such a method, and it is by its systematic application that English, French, and German students gain such a thorough knowledge of anatomy.

Every English hospital, large or small, has its museum, which has been enriched by the labors of generations of demonstrators. The preparations are executed with marvelous care and fidelity, and are mounted in such a way that they can be removed easily for purposes of study. They are entirely at the student's service, and he is encouraged to take his books into the museum, sit down in some quiet corner, and spend hours in the careful, minute study of a single preparation. Thus anatomy is made for him a subject of real interest—the thoracic duct, the chorda tympani, and other structures that he would other-

wise regard as more or less mythical, seeing them only with the eye of faith, become to him living realities, for he has seen and handled them. Not one of the delicate organs of the central nervous system, or of the apparatuses of special sense, is allowed to escape his careful scrutiny. Stimulated by the study of accurate dissections, he strives to equal them. Is it surprising, then, that the English medical student frequently spends a month over a single part?

The German and French methods are only a repetition of the English—the glycerin preparations of the Vienna museum, the wonderful wax models of the Italian schools, are all designed to accomplish the same purpose, the constant and thorough drill of the student in this most important branch of the curriculum. It is unnecessary to enlarge upon the results of this method of teaching; the important question is, whether a like course is practicable in this country. So long as our museums are regarded simply as collections of antique relics, to be visited only by the curious, the first-year student will certainly never take the trouble to examine their contents critically. We have museums (a few), but not one tenth of the instructive specimens find their way into them, and as for the student's being allowed to handle those that are there, it would be regarded as a sort of sacrilege. Until we supplement our deficient demonstrations and dissecting-room work with some systematic use of the material now hidden away on the dusty shelves of museums, anatomy will continue to be, as it is now, the bugbear of the American student, rather than a subject of living interest. With the increasing resources of our medical schools, it is important that teachers of anatomy should ask themselves whether there is not an opportunity for reform in their department.

MEDICAL HEROISM.

THE British medical journals have of late contained many commendatory notices with reference to the sad death of young Mr. Rabbeth, who died from diphtheria contracted by sucking a plug of membrane out of a child's trachea. In addition to the rather excessive amount of praise which has been lavished upon the dead physician, it has been proposed to establish a gold medal in his honor at one of the medical colleges. This recalls the story of the French *interne* who contracted the same disease in the performance of his hospital duties, and was awarded the cross of the Legion of Honor, but too late, as it was placed on the breast of his dead body.

There is something in a generous, impulsive deed that stirs the most stolid heart, especially when it involves the sacrifice of a life. How often have we felt an indescribable thrill of enthusiasm on reading the familiar tablet on the wall of a college lecture-room, recording the names of medical men who died in the performance of their duty during an epidemic! The closing words, "*Hæc mea ornamenta sunt*," have inspired many a careless student with a vague longing to imitate their example.

But, while applauding solitary instances of devotion, let us not forget that the same spirit that actuated Mr. Rabbeth moves

in the breast of every true physician, or that similar acts are performed daily in all parts of the land by obscure and unknown practitioners, who court no fame, who are not even aware of the fact that they are performing a praiseworthy deed. The unsung heroes, like the "missing" after a great battle, are not few in our profession. Let us not, while raising one shining example to the skies, forget those whose devotion is unrewarded save by the "inner consciousness of work well done."

MINOR PARAGRAPHS.

TWO WELL-KNOWN WORKS ON SURGERY.

UNDER the heading "Surgical Science and Surgical Practice" the "Medical Times and Gazette" draws an interesting comparison between the new editions of Mr. Bryant's and Mr. Erichsen's works on surgery. It is always instructive to read the criticisms of the English on their own writers, especially when those writers are teachers occupying such high positions as are accorded to the authors in question. The critic in the present instance is respectful, but none the less sharp, in his comments. He starts with a declaration which is undeniable—that both the books are "exceedingly faulty, artificial, and unscientific." The wonder is that, with this plain counsel (which has been offered several times before), neither of the authors has condescended to modify his work accordingly. This is an example of English conservatism of which even Englishmen disapprove.

Listerism seems to be the rock on which Mr. Bryant has been wrecked, and, while professing to draw a comparison between the two books, the critic takes occasion to place Mr. Bryant in rather an unfavorable light. It is not to be denied that there are serious defects in his book, but surely something ought to be said of its fitness as a student's manual—for which it was always intended—when compared with the verbose and over-loaded volumes by Mr. Erichsen. It is the complaint of every English teacher of surgery, provided he has not himself written a book, that there is no surgical text-book suitable for students. If no one has sufficient public spirit to write a new treatise, it is unfortunate for the students that the old ones still retain the faults that have so often been pointed out in former editions.

SECTIONAL WORK IN THE STATE MEDICAL ASSOCIATION.

As our readers will have noticed in the report we gave last week of the first annual meeting of the Association, the question was raised of dividing the work of the meetings so that it should be done in two sections. No plan to this effect was adopted, but there seemed to be a feeling that it might prove necessary to make such an arrangement in the future. Doubtless the Council will consider this matter in all its bearings before taking any positive step, but we will venture to suggest that, whatever advantages there may be in a division into sections in so large a body as the American Medical Association, there seem to us likely to be none in the case of a compact body that will quite offset the sense of privation sure to be felt by many of the members at not being able to be present at the entire proceedings. Nearly all the Fellows of the Association are general practitioners, interested in the various branches of medicine alike, and we are much mistaken if the great majority of them would not entertain this feeling.

THE MICHIGAN STATE MEDICAL SOCIETY.

It is with much satisfaction that we have examined the last volume of "Transactions" of the society, for the year 1884,

which shows that the work of the society is quite abreast of the times. The mistake is too often made of looking upon the transactions of State societies as possessing only a local interest. Papers of great value are frequently hidden away modestly in such volumes, and the city practitioner commits a great injustice to his rural brethren when he draws the inference that the latter seek the opportunity of rushing into print without having very much to say. The fact is that the country practitioner not only runs across rare and interesting cases, but often observes and works them up with far more thoroughness than his busy (and more self-confident) metropolitan confrère.

AN ACADEMIC AFFAIRE D'HONNEUR.

BERLIN is just now agitated over a choice bit of university scandal. It seems that one Dr. Schweninger was appointed an extraordinary professor because of his success in checking the excessive growth of the German Chancellor's "fair round belly." There are certain of his colleagues who do not regard the service, distinguished as it was, as sufficiently great to entitle Dr. Schweninger to a seat in their body. The new professor called on the Rector, Du Bois-Reymond, and left his cards, which were promptly returned to him. Dr. Schweninger, instead of resorting to the scientific method of retaliation by attacking the Rector's published works, meditated vengeance upon his person, and dispatched a challenge, in true student fashion, which was at once declined.

NEWS ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending November 25, 1884:

DISEASES.	Week ending Nov. 18.		Week ending Nov. 25.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid Fever.....	32	9	42	13
Scarlet Fever.....	49	12	61	15
Cerebro-spinal meningitis....	8	8	1	1
Measles.....	83	12	127	21
Diphtheria.....	62	35	73	25
Yellow Fever.....	0	0	1	1

The New York Academy of Medicine.—At the next meeting, to be held Thursday evening, December 4th, Dr. Joseph E. Winters will read his paper on Tracheotomy in Diphtheritic Croup, which was read before the Obstetrical Section on the 23d of October. He invites discussion on the following points: 1. Is tracheotomy dangerous to life? 2. In what stage of croup should the operation be performed? 3. The causes of death after tracheotomy. 4. The influence of the operation on the disease. 5. The after-treatment.

The Illinois State Board of Health.—At the recent quarterly meeting, held in Springfield on the 20th and 21st inst., the Secretary, Dr. John H. Rauch, presented his report for the quarter ending September 30th, recounting the action taken by the board during the quarter in the matters of sanitation and the administration of the Medical Practice Act, and closing with the following recommendations and suggestions: "1. That a committee of the board be appointed to prepare revisions and amendments of the laws of the State regulating the practice of medicine and concerning the protection of the public health. The defects of the statutes concerning both these subjects are patent, and should be remedied as speedily as possible. 2. That action be taken in anticipation of the forthcoming meeting of the National Conference of State Boards of Health, with

reference to the subject of Asiatic cholera." Action was taken in accordance with these suggestions, and a practitioner's license was revoked for "unprofessional and dishonorable conduct."

The Death of Dr. Fauvel, of Paris, is announced as having taken place on the 6th inst.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from November 9, 1884, to November 22, 1884:*

BYRNE, C. C., Major and Surgeon. Granted four months leave of absence from November 16, 1884. S. O. 265, A. G. O., November 11, 1884.

TERMAINE, W. S., Major and Surgeon. Granted leave of absence for one month on surgeon's certificate of disability. S. O. 233, Department of the East, November 12, 1884.

WILSON, WILLIAM J., Captain and Assistant Surgeon. Granted leave of absence for four months, with permission to go beyond sea, to take effect when his services can be spared by his department commander. S. O. 262, A. G. O., November 7, 1884.

SHEFFELDT, R. W., Captain and Assistant Surgeon. Assigned to duty as post surgeon at Fort Wingate, N. M. S. O. 217, Department of the Missouri, November 4, 1884.

OWEN, WILLIAM O., JR., First Lieutenant and Assistant Surgeon. Relieved from duty at Fort Canby, Washington Territory, and ordered to Fort Spokane, Washington Territory, for duty. S. O. 169, Department of Colorado, November 4, 1884.

McKEE, JAMES C., Major and Surgeon. Leave of absence extended one month. S. O. 273, A. G. O., November 20, 1884.

GODDARD, C. E., Major and Surgeon. Assigned to duty at Fort Yates, Dakota Territory. S. O. 138, Department of Dakota, November 15, 1884.

COWDREY, S. G., Captain and Assistant Surgeon. Granted leave of absence for one month. S. O. 237, Department of the East, November 17, 1884.

HAYARD, VALERY, Captain and Assistant Surgeon. Granted leave of absence for four months. Permission to go beyond sea. To take effect when his services can be dispensed with at his present station. S. O. 268, A. G. O., November 14, 1884.

TAYLOR, A. W., First Lieutenant and Assistant Surgeon. Relieved from duty at Fort Omaha, Neb., and ordered for duty at Fort D. A. Russell, Wyoming Territory. S. O. 101, Department of the Platte, November 19, 1884.

PHILLIPS, JOHN L., First Lieutenant and Assistant Surgeon. Assigned to duty at Fort Keogh, Montana Territory. S. O. 134, Department of Dakota, November 5, 1884.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the two weeks ending November 22, 1884:*

BEARDSLEY, GROVE S., promoted to the grade of Medical Inspector, April 24, 1884. November 14, 1884.

HEFFENGER, A. C., Passed Assistant Surgeon. Assigned to duty at Portsmouth, N. H., to continue till December 12, 1885. November 11, 1884.

WIEBER, F. W. F., Assistant Surgeon. Ordered to the receiving ship Vermont, at New York, November 12, 1884.

AMES, HOWARD E., Passed Assistant Surgeon. Detached from the Greely relief steamer Bear, and assigned to special duty in New York. November 17, 1884.

BRIGHT, GEORGE A., Surgeon. Detached from the Galena and placed on waiting orders. November 19, 1884. daigua, N. Y.

CLEBORNE, C. J., Medical Inspector. Assigned to duty at Philadelphia, Pa., as member of Medical Examining Boards. November 21, 1884.

DU BOIS, F. L., Surgeon. When detached from the Naval Examining Board, November 29th, is ordered to the Galena. November 20, 1884.

GREEN, EDWARD H., Passed Assistant Surgeon. Detached from the Greely relief steamer Thetis, and assigned to special duty in New York. November 17, 1884.

HALL, J. H., Surgeon. Detached from Navy Yard, Mare Island, and assigned to duty at the Naval Hospital at that yard. November 19, 1884.

HUGG, JOSEPH, Surgeon. Assigned to the Minnesota as relief of Surgeon Woolverton. November 15, 1884.

MARTIN, WILLIAM, Assistant Surgeon. Ordered to special duty in connection with the New Orleans Exposition. November 19, 1884.

NASH, F. S., Passed Assistant Surgeon. Detached from the Greely relief steamer Alert, and assigned to special duty in New York. November 17, 1884.

SIMON, W. J., Surgeon. Ordered to the Philadelphia Hospital for treatment. November 17, 1884.

WOOLVERTON, T., Surgeon. Detached from the Galena, and placed on waiting orders for sea service. November 15, 1884.

Society Meetings for the Coming Week:

MONDAY, December 1st: Medico-Chirurgical Society of German Physicians of New York; Morrisania Medical Association, New York (private); Brooklyn Anatomical and Surgical Society (private); Utica, N. Y., Medical Library Association; Boston Society for Medical Observation; Providence, R. I., Medical Association; Hartford City, Conn., Medical Society.

TUESDAY, December 2d: New York Obstetrical Society (private); New York Neurological Society; Elmira, N. Y., Academy of Medicine; Buffalo Medical and Surgical Association; Ogdensburg, N. Y., Medical Association; Medical Societies of the Counties of Herkimer and Saratoga, N. Y., and Hudson, N. J.

WEDNESDAY, December 3d: Medical Society of the County of Richmond, N. Y.

THURSDAY, December 4th: New York Academy of Medicine (Nominations of Officers; Paper by Dr. Joseph E. Winters, entitled "Is the Operation of Tracheotomy in Diphtheritic Croup Dangerous? When should the Operation be Performed?"); Society of Physicians of the Village of Canandaigua, N. Y.; Boston Medico-Psychological Association.

FRIDAY, December 5th: Practitioners' Society, New York (private).

SATURDAY, December 6th: Manhattan Medical and Surgical Society, New York (private); Miller's River, Mass., Medical Society.

Letters to the Editor.

HYDROCHLORATE OF COCAINE IN MINOR SURGERY.

SOUTH NORWALK, CONN., November 22, 1884.

To the Editor of the *New York Medical Journal*:

SIR: As a contribution showing the efficacy of hydrochlorate of cocaine in minor surgery, the following case is of interest at the present time:

A. B., a phlegmatic German, about forty years of age, on Friday, the 14th inst., while cleaning a revolver, accidentally shot himself in the

right hand. The ball (.22 caliber) entered the palm of the hand opposite the third carpo-phalangeal articulation, and, passing outward under the flexor tendons of the hand, lodged against the first phalanx (inner surface) of the little finger, about half an inch in front of the articulation with the corresponding bone. Twenty-four hours after the accident the man came to my office to have the wound dressed. At that time the hand, which naturally was very large and thick, was considerably swollen and inflamed; there was also considerable pain. I gave him a hypodermic injection of five minims of a two-per-cent. solution of the hydrochlorate of cocaine on the back of the hand, at the inner side of the last metacarpal bone—deeply injected, so as to bring the drug as near as possible to that branch of the ulnar nerve supplying the inner side of the little finger. Five minutes later another hypodermic of the same amount was given along the back of the first phalanx of the little finger, the solution being thrown in as the needle was withdrawn. He said that the introduction of the needle the second time gave not the slightest pain, the first one having hurt him and been followed by smarting (probably due to the alcohol). After waiting five minutes longer, I made the necessary incision, an inch or an inch and a half long and quite deep, owing to the size of his finger and its swollen condition. Neither the cut nor the subsequent manipulation in the removal of the ball, nor the dressing, gave him *any pain whatever*. He described his sensations in the hand as being "numb or asleep."

Without the cocaine, the little operation would have been quite painful, owing to the inflamed condition of the parts. I have performed two or three other slight operations upon mucous membranes, where the drug was applied on a pledget of cotton soaked in the solution, held against the part for ten or fifteen minutes, which were equally painless.

Yours sincerely,

W. C. BURKE, JR.

HYDROCHLORATE OF COCAINE IN DERMATOLOGICAL PRACTICE.

14 EAST THIRTY-FIRST STREET, November 24, 1884.

To the Editor of the *New York Medical Journal*:

SIR: Much has been published of late concerning the local anæsthetic effect of the hydrochlorate of cocaine, mainly by the ophthalmologists. It is from the dermatological standpoint that I wish to make this contribution.

Epilation by means of electrolysis is often, to some patients, rather a painful procedure, especially about the upper lip, near the nose, and over the jaw bone, between its angle and the chin. These regions offered a good field for testing cocaine. Accordingly, I had a four-per-cent. ointment of cocaine and oleic acid (not an oleate, you will perceive) made by my druggist, Mr. Fingerhut, of No. 404 Fourth Avenue, the hydrochlorate used being from a lot that had proved active in ophthalmological practice. I first tried it on the back of one of my wrists, rubbing it in for some five minutes. I found that pulling on the hairs of the part rubbed was much less painful than elsewhere. Then I had an intelligent patient, whose superfluous hairs I was removing by electrolysis, rub it well into the left side of her upper lip and into her cheek, between the angle of the jaw and the chin. In about five minutes the anæsthetic effect was well marked, and she allowed the hair in those regions to be extracted with a current from twelve cells of a freshly charged battery without evincing any signs of pain. Two days before, the operation had been very painful, although only nine cells were used, and on the same day the corresponding regions on the other side of the face were very sensitive. The anæsthetic effect lasted for the whole time I was working, probably thirty minutes. The patient said that some hairs were removed without her feeling it, and that the pain attending the extraction of the others did not amount to anything.

One case is not much to build upon, and I only report this

to encourage others to try cocaine in similar cases. I certainly feel encouraged to try again.

Yours,
GEORGE THOMAS JACKSON.

A POINT ON LIGATURES.

INDIANAPOLIS, IND., November 1, 1884.

To the Editor of the *New York Medical Journal*:

SIR: I recently sewed up a bad cut on a boy's hand with one of the three strands of ordinary surgeon's silk, unwaxed and not antiseptised, purposely. In four days there was nothing unabsorbed but the knot. Dirt and air were excluded by two layers of silk isinglass plaster.

I removed an egg-sized adipose submaxillary tumor, a few weeks ago, through a three-inch incision. The wound was closed with clean, new, $\frac{3}{8}$ surgeon's silk, without plaster or external application of any kind, the suture material unwaxed or otherwise treated. The lips of the external wound were perfectly united, without a drop of pus about the wound, and the *subcutaneous part of the ligatures was almost gone from absorption* on the fifth day, when the knots were removed. Silk is formed animal tissue, and, without being rendered a foreign body by wax or other treatment, may be the much needed ligature we seek. My opportunities for testing this matter are so limited I ask you to use the hint (if you think best), since I find several good surgeons here have not heretofore appreciated the point, as possibly some of your distinguished experimenters have.

Truly yours, L. D. WATERMAN, M. D.

Proceedings of Societies.

NEW YORK SURGICAL SOCIETY.

Meeting of November 11, 1884.

The President, Dr. ROBERT F. WEIR, in the chair.

Simultaneous Incomplete Wound of the Femoral Artery and Vein; Ligation of both Vessels in the Wound; Recovery.—Dr. L. S. PILCHER presented a man, aged thirty-four, a butcher, who, in the evening of May 17th last, accidentally stabbed himself with a sharp, long, narrow-bladed knife, the blade entering the upper and front part of the right thigh, a little below the line of Poupart's ligament. The overwhelming hæmorrhage which at once followed was fortunately quickly controlled by pressure at the hands of Dr. N. B. Sizer, of Brooklyn, who happened to be within hail at the moment of the accident. This pressure was then assisted by the insertion of a tampon into the wound until the arrival of Dr. Pilcher, and thus time was afforded to make the necessary arrangements for the permanent arrest of the hæmorrhage. The parts adjacent to the wound were shaved and cleansed, and as full an effort was made to conduct the required operative procedures without septic contamination as was possible under the circumstances. The original wound was a transverse cut of only three fourths of an inch in extent. A longitudinal incision of some inches in length was made, extending above and below the stab cut, while pressure was kept up at the point from which hæmorrhage proceeded. The femoral vessels in Scarpa's space having been fully exposed, it became evident that the knife had pierced the femoral vein about an inch and a half below Poupart's ligament, and, having divided its outer half, had also divided the adjacent inner half of the femoral artery, inflicting thus an incomplete wound upon both the main vascular trunks of the limb. While pressure was still directed upon the vein wound, the artery, being compressed above, was completely divided at the point of

wound, and each of the divided ends secured by a catgut ligature. More difficulty was experienced in dealing with the vein, for, although adequate pressure was made upon it both above and below the wound, the moment the pressure upon the wound itself was interrupted, a most copious flow of blood would deluge the field of operation. The embarrassments of the moment were increased by the dim light, which was but little bettered by the lamp of the ambulance surgeon who was acting as one of Dr. Pilcher's assistants, and by the fact that the previous infiltration of the region with blood had become such as decidedly to obscure the distinctions between the tissues of the parts usually available as guides. Further dissection, however, finally revealed two large muscular vein-trunks entering the femoral vein from behind, just opposite the point of the wound. A ligature having been tied about each of these, the further dealing with the main trunk, by severing it and tying each end separately, was accomplished without difficulty. The wound was then irrigated with solution of bichloride of mercury, 1 to 1,000, and closed with sutures, proper bandaging and compresses being applied to insure union by first intention. Suppuration, however, took place, and on the third day the wound was reopened at its most dependent point, drainage-tubes were inserted, and irrigation was resorted to. A sharp attack of cellulitis along the line of the sartorius muscle followed, making several counter-openings for drainage necessary for its control.

The patient rallied well from the extreme loss of blood sustained at the time of the accident. After the eighth day his progressive convalescence was assured. His perfect recovery was delayed by the fact that some of the catgut ligatures proved to be irritants, and determined circumscribed phlegmons at the points where they had been applied. These all finally closed, and on the 2d of July the patient began to attend to his business again. Later in July another small phlegmon formed at the site of the lower ligatures, which, however, occasioned only a temporary inconvenience.

At no time in the history of the case did any noticeable disturbance in the nutrition of the limb occur. In the early days, after he began to walk about, there was marked oedema with weakness of the leg; an elastic stocking sufficed to control this. To-day, about six months after the injury, he used no support to the limb, and impaction showed a barely recognizable tendency to oedema of the leg. During the operative procedures required for ligating the vessels at the time of the injury, neither the profunda artery nor the internal saphenous vein came into view, but it might be assumed that the wounds were below the points where these vessels joined their respective main trunks.

Besides the interest attaching to the peculiar nature of the wound itself, and the fortunate conjuncture by which immediate death was averted, special interest attached to the bearing of the case upon the treatment of wounds of the femoral vein. The history of the case demonstrated the value of diminishing the arterial supply to the limb, when the great vein outlet of the limb had been secluded, but, as a means of controlling the hemorrhage from the vein wound, it had been seen that the ligation of the femoral artery was valueless, for the apparent profuseness of the flow from the vein wound was not diminished after the artery had been secured.

Dr. A. G. GERSTER reported a case which occurred in his experience five years ago, and belonged to the class of injuries included in Dr. Pilcher's case. One of his colleagues at a city hospital had removed the inguinal glands from a young man. It was thought afterward that, instead of an eight-per-cent. solution of chloride of zinc being used, by the mistake of a nurse a much stronger solution was employed for washing out

the wound, at the bottom of which the femoral vein and artery were exposed. Three days after the operation an exceedingly profuse hemorrhage occurred, and the house surgeon knew no better than to throw an elastic bandage around the limb below the point of bleeding, because it was venous blood which poured out of the wound. The constriction was sufficiently strong to compress the veins but not the artery, and the limb became a reservoir for a large collection of the patient's blood. Accidentally Dr. Gerster called at the hospital about two hours after this had occurred. When his attention was directed to the case he saw that local pressure was being kept up by means of large bundles of dry cotton pushed into the bottom of the wound. Naturally, it failed to control the hemorrhage completely. The patient was nearly dead from acute anæmia. Dr. Gerster removed the clots from the bottom of the wound, for the purpose of finding the source of hemorrhage, and saw that a piece about one inch long and one fourth of an inch wide, belonging to the anterior wall of the vein, had sloughed out, and through this large opening great quantities of blood poured forth. The artery being exposed in the bottom of the wound, his first thought was to adopt Langenbeck's proposal to occlude the femoral artery, which was easily accomplished by pressing it against the pubes. But this did not control the hemorrhage, wherefore the idea of ligating it was abandoned. There remained, therefore, nothing but to ligate the vein itself, and he divided the vessel as Dr. Pilcher had described, as well as possible while pressure was being constantly exerted upon it above and below, and applied ligatures on both ends. The hemorrhage, however, did not cease, and continued because large muscular, venous trunks entered from behind. By the time these were exposed and tied the patient had expired. Undoubtedly it was not external hemorrhage alone in this case which caused the fatal issue, because one of the largest limbs of the patient was gorged with blood to its utmost, and was not only cyanosed, but was necessarily increased in circumference.

Aneurysm of the Right Subclavian Artery.—Dr. GERSTER then presented a patient with the following history: Aug. Beute, fifty-one years old, a cigar maker by trade, never had syphilis, and, no vestiges of the disease being visible, presented a large, bony frame covered by wasted, flabby muscles, and a pale, sallow skin. He alleged that he had noticed increasing and very acute pain along his right arm since the summer of 1883, accompanied by wasting of the muscles and a peculiar bluish discoloration of the skin of the arm and hand. Since autumn the terminal phalanges on the right hand had become shovel-shaped, the nails like claws, and his general condition very much impaired by constant pain, fornication in the hand; and lately there had been increasing dyspnoea. Shortly before New Year's, 1884, Dr. John Schmidt noticed, at the German Dispensary, a pulsating tumor behind and to the right of the sterno-clavicular joint of the right side, and diagnosed an aneurysm of the right subclavian artery. Dr. Gerster confirmed the diagnosis, but thought that the location of the tumor, the pulsatile elevation of the sterno-clavicular joint, a corresponding dullness, and the dyspnoea, warranted the assumption that the aneurysm at its bifurcation was also concerned in the lesion. The characteristic *bruit* was present, and the carotid and radial pulses were normal and synchronous with the heart's action. The inferior cervical triangle of the right side presented not a depression, but a distinct elevation above the level of the clavicle and the sterno-mastoid muscle, the main swelling and resistance being probably situated in the angle of the clavicle and the sterno-mastoid muscle. Direct pressure on the tumor was not tolerated, on account of the intense pain, but reduced the swelling and pulsation to a great extent.

On January 16, 1884, Dr. Gerster ligated the common carot-

id and the subclavian, or, according to English nomenclature, the axillary artery, the latter being tied in Mohrenheim's triangle, below the clavicle. The ligatures used were of juniper catgut. The incisions were sewed up, not drained. Immediately after the ligatures were applied the radial pulse and that of the carotid disappeared, but the pulsation of the tumor became more violent than before, when the ligature on the carotid was tightened. Nothing abnormal was observed regarding the pupils, the heart's action, or the respiration.

For a considerable period of time no appreciable difference in the conformation of the pulsating swelling was observed, and, on the contrary, the shooting pains and formication along the branches of the brachial plexus seemed to increase. The wounds healed correctly under a single dressing. About four weeks after the operation it first became apparent that the tumor had decreased in size. Simultaneously the pains became more tolerable. In March and April thirty hypodermic injections of Bonjean's ergotin were made in the abdominal region, and seemed to hasten the shrinking of the tumor, which now became very manifest. By May the cyanosis, hyperidrosis, glossy skin, and formication, as well as the neuralgic symptoms, had so much abated that the patient could sleep without opiates, and had gained over ten pounds in weight. The atrophy of the muscles of the arm and forearm had also improved materially under massage and active exercise, and now the patient, who had seemed to be at death's door, might be said to be fairly and sufficiently comfortable, and was attending to his avocations. The abnormal pulsation and *bruit* had entirely disappeared, and only a well perceptible fullness and resistance could be seen and felt in the right supraclavicular fossa as compared with the other side. There were short, mild, and rare attacks of shooting pains along the arm and up the nape of the neck; and finally, the peculiar shape of the terminal phalanges of the hand and of the nails of the right hand had unavoidably remained. It seemed that the subclavian portion of the aneurysm was filled up with a solid clot, the radial pulse being absent to this day.

Dr. H. B. SANDS thought it might be a question whether the aneurysmal sac was completely obliterated. It was evidently firm, but pulsation was quite marked.

Dr. GERSTER perhaps might be allowed to correct himself in so far as he had said in his written history of the case that he believed a solid clot filled that portion of the aneurysm which belonged to the subclavian. The radial pulse had appeared only very lately.

Dr. L. A. STIMSON referred to a case, which he reported four years ago, in which he ligated the carotid and subclavian simultaneously for aneurysm of the innominate artery. There remained a distinct pulsation in the sac above the clavicle. The patient died twenty-one months subsequently of acute phthisis, and at the autopsy the aneurysmal sac was found completely filled by a firm clot except for a very narrow slit-shaped opening through which blood passed from the aorta to the branches of the thyroid axis. Of course, it could not be said positively that the condition at the autopsy was the same as that which existed at the time the patient was presented to the society, but up to the time of the patient's death there was pulsation in the sac, the same as when he was presented to the society. In his mind there was no question but that the pulsation was a communicated one, and in Dr. Gerster's case he should not regard the pulsation as proof positive that the sac was not occupied by a clot.

Osteoplastic Excision of the Elbow Joint.—Dr. STIMSON presented a patient upon whom he had performed excision of the elbow joint. He thought the case worthy of presentation because, first, the operation was a modification of one that had recently been introduced, and, second, because of the com-

plete restoration of the form, and the partial restoration of all the functions of the joint. The patient was a boy sixteen years of age, who, sixteen months before coming under observation, received a blow on the outer side of the left elbow, which was followed by swelling, heat, tenderness, and the formation of many sinuses in the arm and forearm. When Dr. Stimson first saw the patient the limb was swollen, the joint was painful, though capable of some motion, and there was lateral mobility with grating. The excision was performed on the 17th of May last. An incision according to Ollier's method was made, extending along the outer aspect of the lower end of the arm, and then diagonally across to the olecranon and along its outer edge. From this, at the lower end, a transverse incision was made across the ulna, the joint opened freely, and the olecranon divided obliquely backward at its thinnest part. The triceps and the adherent posterior part of the olecranon were then reflected to the inner side, and the joint was freely exposed, the inner condyle being denuded through a small incision over the epitrochlea, and then the humerus was divided by a transverse cut through the epicondyles. The surface of the olecranon was freely scraped, and it was necessary to remove almost the entire coronoid process. As this scraping had greatly enlarged the sigmoid cavity, he removed a segment of bone, one fourth of an inch in thickness, adjoining the incision through the olecranon, and thus shortened this cavity. Then, because of induration of the soft parts covering the front of the joint, he removed another slice one fourth of an inch in thickness from the humerus. The sinuses were then freely scraped, and the limb was dressed in the usual manner. The olecranon was reunited by silver sutures. The course of the case was uneventful. The wires were removed about two months after the operation. The patient now had very free motion in the joint, and good restoration of the form of the limb. Extension was particularly strong; flexion was weaker than extension. There remained an opening on the inner side of the arm, but it did not communicate with the bone. The patient could flex and extend the elbow actively. The bone was divided with an instrument brought to this country from England last spring, consisting of a combination of a forceps and a chisel-shaped saw, called an exsector. It was like an ordinary forceps with the claws at right angles to the handles, and on the side of the joint there was a small flat shell on a pivot, which held the saw and allowed it to be worked from side to side, and thus cut its way downward along the side of the claws. The instrument in his hands had proved very satisfactory.

Dr. GERSTER could not share with Dr. Stimson in his good opinion of the instrument mentioned. He had used it five or six times, and had seen it used by other surgeons, and he must say that it had two disadvantages: First, it was a complicated instrument, which easily got out of order, and was very difficult to clean; second, the leverage of the claws which took hold of the bone was disproportionately great, and he had seen the epiphysis of an infantile bone completely crushed by it.

Dr. STIMSON had not encountered any of the objections which Dr. Gerster had mentioned with reference to the exsector. He had, however, found it necessary to round the corners of the chisel in order to make it work more easily. The excessive amount of force which the instrument was capable of exerting Dr. Stimson thought was within the control of the surgeon who applied it.

Cases of Partial Resection of the Elbow and Shoulder for Tuberculosis, and of the Ankle for Traumatism, were presented by Dr. W. S. HALSTED.

CASE I.—Elbow.—A man, aged thirty-six, believed that a brother had died of consumption. His family history was otherwise good

About two years ago pain, spontaneous and insidious, developed in the right elbow, but until July, 1884, the patient's suffering had been inconsiderable. His sleep was little disturbed, and moderate movements of the affected joint did not cause pain. On his admission, July 22, 1884, there was consolidation at the apices of both lungs. The specific gravity of the urine was 1.028, and it contained oxalate of lime. There was a spindle-shaped enlargement of the right elbow joint, with fluctuating swellings to the outer side of and behind both condyles of the humerus. Flexion, possible only to less than a right angle, was painful. The inner swelling was incised and about one ounce of cheesy pus was removed. September 3d, the patient's elbow having for several weeks annoyed him greatly, injections of iodoform ointment were made through a fistulous tract into the joint, and contributed at first to his comfort. Anodynes, even in large doses, gave little relief. There was much redness about the joint, and the slightest motion caused great pain.

Ether having been given, Esmarch's bandage was applied, and as strict antiseptic precautions as practicable were observed. A longitudinal incision was made, eight inches in length, parallel to and just to the inner side of the inner border of the olecranon. Then a transverse incision was made, at right angles to the first one, outward to the plane of the radius, opening the joint and dividing the triceps muscle close to its insertion into the upper border of the olecranon process. A short longitudinal incision was then made at right angles to the second incision, and parallel to the outer border of the olecranon, to the neck of the radius. He preferred dividing the triceps to sawing through the olecranon, as proposed and practiced by Bruns, and practiced by Mosevig Moorhof and others, and by Dr. Stimson in the case just presented by him, because it was simpler in the first act, viz., opening the joint, and in the subsequent acts, should it prove necessary, as it almost invariably must, to remove the articular surface of the olecranon. The joint then being still more thoroughly exposed by liberating the sides of the olecranon from the triceps and anconeus attachments, all the articular surfaces were found to be more or less involved in the disease, which was distinctly tuberculous with, fortunately, sclerotic confines. The articular surfaces of the humerus, of the head of the radius, and of both sigmoid cavities were sawn off, also the upper surface of the olecranon. Thus a rectangular replaced the sigmoid cavity somewhat as figured in Leinhardt's "Operationslehre." The capsule and articular ligament were completely dissected out and the walls of the sinus scraped with a Volkmann's spoon. The end of the humerus was sewed with catgut into the step made in the olecranon, and the space necessarily left between the humerus and the radius was obliterated by turning into it the divided triceps and anconeus muscles, which were retained by several "*Einstülpungsnähte*." Other small dead spaces were obliterated by quilted sutures. Wound was closed by the furrier's suture, and three short drainage-tubes were introduced. The dressing was applied previous to the removal of Esmarch's elastic bandage, and the limb, flexed to about 45°, was preserved from constriction by the introduction, in the dressing, of narrow strips of wood to distribute the pressure made by the tightly applied bandage. The arm was, of course, maintained elevated for about thirty-six hours.

September 6th, the dressing was changed; the edges were perfectly united; there were no signs of inflammation.

15th.—Redressed; drains apparently almost absorbed. No pus. Rectangular splint applied.

26th.—A small subcutaneous abscess in the cubitus opened, apparently having no connection with the joint.

The patient, as presented, seemed to have a perfectly healed joint. There still remained in the cubitus the mouth of a subcutaneous fistula, about half an inch in length, which did not, apparently, lead toward bone. Although it was but six weeks since the operation, the patient could flex and extend the elbow moderately and without pain. Dr. Halsted advocated partial as opposed to so-called typical resections of the elbow joint for tuberculosis.

CASE II.—*Shoulder*.—I. H., male, aged fifteen years. No tuberculous heredity ascertained. All the members of his immediate family alive and healthy. About the middle of April, 1884, he wrenched his

left arm while lifting down a coal-scuttle. He felt pain immediately in the left shoulder joint, severe enough to prevent sleep for three nights. On the fourth day the pain had subsided, except on motion. A few days later he applied at the Roosevelt Hospital Out-Patient Department for relief. The muscles about the joint were then much atrophied. The head of the humerus on the affected side appeared smaller than on the sound side. The joint was not thickened at any part, but was fixed by muscular action. Passive motion and palpation of joint were painful. There were no points of special tenderness. A plaster-of-Paris splint was applied, and on August 20th, when the splint was removed, there had been no pain whatever since its application. There was a fluctuating tumor of about the size of a pigeon's egg at the back of the joint, under the deltoid muscle. The skin over it was normal. August 26th, about one drachm of flocculent pus was withdrawn from the abscess with a Pravaz's syringe, and iodoform ointment (iodoform, one part; almond oil, two parts) was injected into the abscess cavity. Examination of the pus, by Dr. R. J. Hall, revealed, from eight cover-glasses, five tubercle bacilli.

August 27th.—Patient was confident that he had been benefited by the iodoform injections, and unwillingly allowed a repetition of the aspiration and injection of the cavity, which had more than attained its former size.

September 14th.—Condition essentially unaltered.

16th.—Arthrotomy was performed by a posterior incision through the abscess, leading directly into the joint, which was distended with pus. The much-diseased head of the humerus was sawn off at the surgical neck; the glenoid cavity and capsule, also extensively involved in the tuberculous process, were scraped with a sharp spoon. The furrier's suture was used, and a short rubber drain was inserted at the lower angle of the wound.

30th, two weeks after the operation.—Original dressing removed. Wound healed, without pus, to the drainage-tube. Tube removed.

October 10th.—Second dressing.

November 1st.—Wound entirely healed. Free passive motion does not cause pain; active movements inconsiderable. Electricity applied to the deltoid.

On presenting the patient, whom he had not seen for one week, Dr. Halsted discovered a small fistulous tract at the lower angle of the wound.

The interesting features in the case were its traumatic origin, the immediate atrophy of the deltoid muscle, the failure of iodoform injections, the rapid healing of the wound, and the early partial restoration of function.

CASE III.—*Ankle*.—C. L., aged twenty-seven years, was admitted to Roosevelt Hospital October 17, 1883. Just before admission he had been thrown from a horse, and, as he fell on his feet, his right foot turned under him. The tibia and fibula protruded from an extensive wound on the outer side of the ankle, the foot being strongly supinated. Both malleoli were broken off and adherent to the dislocated foot. The patient was etherized, and the malleoli were removed, together with two inches or more of the lower ends of the splintered upper fragments of the tibia and fibula. The furrier's suture was used. A rubber drainage-tube was passed through the joint.

30th.—Wound dressed for the first time. Complete union along the lines of suture.

November 7th.—Second dressing; superficial ulcers where the drainage-tube had been.

December 14th.—Patient walks with crutches. On presentation, he walked easily with lateral brace. He could flex and extend the ankle quite as much as, if not more than, on the sound side, notwithstanding the shortened leg bones.

Corrosive-sublimate solution, 1 to 1,000, was used as the irrigating fluid, and iodoformized gauze as the dressing, in the three cases. The wounds healed in all primarily.

A Case of Impacted Extra-capsular Fracture of the Neck of the Thigh Bone.—Dr. J. C. HUTCHINSON read a paper with this title. [See page 604.]

Dr. FRANK H. HAMILTON was invited by the President to open the discussion on Dr. Hutchison's paper, and said: "I consider this paper of very great interest, not only in its simple narrative of the case, but in the valuable suggestions which it contains, and the more so because the author of the paper is a surgeon of distinction and experience, and therefore relates more intelligently his own personal experiences than they could have been related by a second person. For these reasons I hope the author will not withhold the name of the patient who received the injury.

"As to whether or not this was originally a case of fracture, I assume that it was one, for one or two other reasons than those stated by Dr. Hutchison. I am in the habit of assuming, when a man of the age and weight of the patient falls violently upon the trochanter major, that he has almost certainly received a fracture of the neck of the femur, probably extra-capsular. In deciding, in the case under observation, as to whether it was a fracture or not, this was a very important factor in the diagnosis. A second reason was, and of still greater importance, perhaps, that there was a manifest depression of the trochanter major. That the limb was a little shortened, one fourth of an inch, perhaps, subsequently one sixth of an inch, I might explain upon the supposition that this was normal. On the other hand, it might be that the shortening was actually greater than was represented by the measurement, because the injured limb was perhaps normally longer than the opposite limb. But, that there was shortening, all who saw the patient agreed.

"With regard to the muscular spasms, I do not say that they are absolutely diagnostic of an extra-capsular fracture of the femur, but, while they are often present in fractures of the shaft, they are almost universally present in fracture of the neck, especially of extra-capsular. I have explained this on the supposition that the muscles and the nerves in the vicinity of the fracture have been injured somewhat. The fullness in Scarpa's region, which occurred later, and which the doctor recognized, would at least lead us to suspect fracture.

"All the circumstances point so directly to extra-capsular fracture of the neck of the femur that I do not think we can entertain a doubt of its occurrence, but the greatest doubt is thrown upon the case by the remarkable result; that is, there is no eversion, no osteophytes are apparent, and the shortening is very slight."

Dr. HALSTED said that, when he examined the patient referred to by the author of the paper, he made out from five eighths to three fourths of an inch shortening; not only by measuring from the anterior-superior spine of the ilium to the external malleolus, but also along Bryant's line. It seemed to him to be sufficiently easy to tell whether the shortening was due to fracture of the neck or not by measuring from the top of the trochanter to the malleolus on both sides; but, if the shortening along Bryant's line corresponded to the difference in measurements made from the anterior-superior spines of the ilia to the malleoli, it was fair to suppose that fracture existed. He also noticed that the affected side was flattened extero-internally, and that there was an abnormal fullness behind the great trochanter, which strengthened his belief that a fracture existed.

Dr. STIMSON thought the two opposing facts mentioned by Dr. Hamilton did not seriously affect his diagnosis. There were many specimens showing that repair had taken place without the formation of osteophytes; and, as to eversion or limitation of inversion, that was a symptom dependent upon mechanical conditions which might or might not be present, for example, impaction with outward rotation of the shaft upon the neck. If the impaction took place, as in Dr. Hutchison's case, without such rotation, the range of eversion and inversion would not be

modified. The occasional great difficulty of reaching a diagnosis was admitted by all. In a case recently under his own care, resulting from a fall upon the trochanter while walking, the limb was slightly adducted and inverted, shortened half an inch, the trochanter being a third of an inch farther from the median line; there was no pain on pressure in front of, or behind, or upon the trochanter; there was inability to raise the head. Several surgeons saw the case, but declined to make a diagnosis. The shortening increased during the next week to one inch; then Buck's extension was applied, and in due time the patient left the hospital, walking without a limp, but with three quarters of an inch shortening.

In another case, sent to Bellevue from another hospital with the diagnosis of fracture of the neck of the femur, there was inability to walk or raise the heel from the bed, with sharp pain on pressure behind the trochanter; there was doubtful shortening of a quarter of an inch, but no fullness of Scarpa's space, and no pain when the limb was forcibly pressed against or pulled away from the body. The patient was left without any dressing, and in two weeks was able to walk easily, with only a slight limp. He was more than fifty years old.

Dr. C. K. BRIDGON had seen, some years ago, a case similar to the one related by the author of the paper. The patient was on a pleasure trip, more than a hundred miles distant from his home, when he was thrown violently, his hip coming in contact with the ground. He was transported on an extemporized stretcher to a baggage-car, and to his home, where Dr. Bridgon saw him in consultation with his family physician. The limb was disabled, he complained of a good deal of pain, could not raise his heel from the bed, there was slight eversion, the movement of inversion was limited, there was about half an inch shortening, gentle rotation of the thigh elicited no crepitus, and when the trochanter was grasped during such movement it was manifest that it described the arc of a lesser circle than on the opposite side. The diagnosis was, impacted fracture of the neck of the thigh bone. Rotation of the femur revealed one symptom which Dr. Bridgon had always regarded as characteristic of the lesion. In an *unimpacted* fracture, when the trochanter was grasped during rotation it would be felt that it was rotated through the axis of the shaft; when the fracture was *impacted*, the trochanter moved through an arc of a circle of which the head of the bone was the center, and the excursion made by the trochanter would depend upon the depth of the impaction.

Another symptom referred to in the case reported was fullness in the upper part of Scarpa's space. This could sometimes be felt in lean patients as a more or less bony prominence in the region of the neck, and, with the symptom of eversion, depended upon the manner of impaction, which was accounted for by anatomical considerations brought prominently before the profession by Professor H. J. Bigelow in his essay on "The Hip." From the examination of a number of museum specimens, he had concluded that the posterior portion of the neck was always driven in, and that the anterior portion was bent at an angle prominent in front. To ascertain the cause of this, sections of the sound bone were made, and it was found that near the junction of the neck with the head of the bone the anterior and posterior walls were of nearly equal thickness; but that, as the lower surface of the neck was approached, the anterior wall became of great thickness and strength, while the posterior remained thin, especially at its insertion beneath the posterior intertrochanteric ridge, where it was as thin as paper. Hence it was that the posterior portion of the neck was driven into the cancellated structure of the trochanter, causing the prominence in front, the slight external rotation, and the other signs already alluded to.

Dr. Bridgon stated that he had at the present time a patient

under his care in the Presbyterian Hospital, in whose case all these signs were made out by the most gentle manipulations, and without disturbing the relations of the parts, and he considered it as most important to avoid such handling as would be likely to break up any existing impaction.

Dr. A. C. Post said the case related by the author of the paper did not seem to accord with the opinion of Robert Smith, of Dublin, who stated that in extra-capsular fracture the initial force which occasioned the fracture always caused impaction; and, if more force than that which caused the impaction was applied, it split the bone through the trochanters and the impaction was relieved. The degree of violence in Dr. Hutchison's case seemed to have been sufficient to relieve impaction by splitting the bone at the junction of the trochanters with the shaft, and in this respect the case was exceptional, and the absence of splitting the shaft of the bone would explain the absence of osteophytes. Dr. Post further remarked that the ability to walk was not proof positive against fracture. Not long ago he had seen a case of intra-capsular fracture of the neck of the femur in which there was doubt with regard to the existence of fracture. The patient after a few days did walk, and there was subsequently displacement which left no doubt with regard to the existence of the fracture. Instances, he thought, were not very rare in which, the parts being held together firmly, the patient could walk, and we might assume that in such cases the parts might unite without further separation.

Dr. L. M. YALE referred to a marked case of this character which he had seen eighteen years ago, in which the patient fell, received his injury, walked a distance of one hundred feet, entered the wards of the hospital, and went to bed. It was a doubtful case of the kind, but, as the symptoms were those of probable fracture, he was sent to Charity Hospital, where he subsequently died of an intercurrent disease. The autopsy revealed impacted fracture of the neck of the femur.

Dr. STIMSON referred to a case occurring in a patient sixty-three years of age, who received an injury of the hip, walked down one staircase, along the hall, down the next staircase, and then was unable to walk, and was brought in that condition to the hospital. The patient died three weeks subsequently of erysipelas, and at the autopsy Dr. Stimson found a pure intra-capsular fracture of the neck of the femur.

Dr. SANDS said that Dr. Hutchison's case afforded a striking illustration of the difficulties experienced in determining the comparative length of the two limbs according to our customary mode of examination. It seemed that, of the several surgeons who examined the limb, no two reached the same conclusion, and that there was so great a difference of opinion as to make the shortening in one instance one sixth of an inch, and another from one half to three quarters of an inch, both surgeons presumably measuring between the same points. Of course, it would not be fair to assume that the length of the two limbs varied at the times they were measured, and the discrepancy arose from the difficulty in ascertaining what were called bony points. Such difficulty made untrustworthy the reports which were published of the results of treatment, for similar inaccuracies must occur in measuring the limbs after a fracture had consolidated. In many cases it might be easy to fix upon the bony points for measurement; but in persons who were fat it might be difficult or impossible to recognize them.

Dr. Sands had sometimes experienced the same difficulty in obtaining definite results with Bryant's test, and believed it to be untrustworthy when applied to those in whom adipose tissue was abundant. The difficulty was in recognizing the bony points—namely, the anterior-superior spinous process of the ilium and the tip of the great trochanter. Dr. Sands thought

that, in cases of fracture, the old-fashioned method of bringing the feet together—avoiding any obliquity of the pelvis—and then comparing the two internal malleoli would often give results quite as correct as those obtained by methods which we were accustomed to regard as more scientific. He believed that the practice of measuring between the iliac spines and the malleoli was far more prevalent in America than in Europe, where but little confidence was placed in it.

Dr. CHARLES MCBURNEY referred to the case of a man about forty years of age who three weeks ago came under his observation after the receipt of an injury of the left hip. The disability was great; but there was neither eversion nor inversion. As the patient lay upon a flat surface it was evident that there was apparently very great shortening of the limb on the injured side; that is, the sole of the foot on the injured side was drawn markedly above that on the uninjured side. On measuring the two limbs a curious discrepancy was detected. Measurement on the injured side from the anterior-superior spine of the ilium to the malleolus showed that there was one inch and a quarter *lengthening*. The absurdity of this was very apparent, and, on further inquiry and examination, it was found that the patient had had necrosis of the right tibia many years ago, tending to imperfect growth of that bone, and, on measurement, it was found that the entire discrepancy was in the length of the two tibiae. Dr. McBurney then measured along Bryant's line and found that the measurements were equal on both sides. The case proved to be one of contusion and not fracture.

Dr. STIMSON said that at one time he measured a large number of cadavers and afterward laid bare the bony points and repeated the measurements, and found considerable discrepancies between the results of these two measurements.

The PRESIDENT asked if the fact did not remain that, if unreliable within small ranges for diagnostic purposes, yet in actual practice the method of measuring from the anterior-superior spine of the ilium to the malleolus was sufficiently trustworthy for prognosis, as it was commonly accepted that, if there was three fourths of an inch or less of final shortening, the patient would get along without limping.

Dr. SANDS thought that the case reported by the author of the paper was one in point. The patient was examined by two competent surgeons. One determined the existence of one fourth of an inch of shortening, which afterward he reduced to one sixth of an inch; and the other found from one half to three fourths of an inch shortening. Now, if this had been a case in which the result of treatment was the point to be decided, two surgeons, equally competent, and employing the same method of examination, would have failed to reach the same conclusion.

The PRESIDENT said all would agree that it was sometimes very difficult to determine exactly the situation of the bony points; still he did not know of any readier way of making out the actual length of the limbs.

Dr. HALSTED thought the better way was to use Bryant's test.

NEW YORK CLINICAL SOCIETY.

Meeting of September 26, 1884.

Dr. L. B. BANGS in the Chair; Dr. L. ENMETT HOLT, Secretary *pro tem*.

Spasm of the Respiratory Muscles.—Dr. BEVERLEY ROBISON presented a patient, a man twenty-four years old, a German, by occupation a driver, who had been admitted into Charity Hospital on the 16th. The patient stated that he had always been perfectly healthy, with the exception of his present trouble and two similar attacks, one of which occurred at the age of seven and the other twelve months subsequently. His present attack

began about two weeks before his entrance into the hospital, without assignable cause. It consisted essentially in the fact that about every six or eight seconds he inflated his lungs to their fullest capacity by a somewhat spasmodic involuntary effort. Upon the slightest emotional excitement the frequency and spasmodic character of the successive inspirations were notably increased. During the time they lasted, the patient's countenance became rather dusky in hue, with slight pallor over the cheeks, the eyes staring and prominent, the trunk bent forward, and the hands supported by the knees, so as to give additional power to the inspiratory effort. After several of these exaggerated inspirations, he complained of vertigo and asked beseechingly for a drink of water. Swallowing water afforded him some relief for a few seconds when his attacks were the most severe. The attacks were always more intense toward nightfall, and, unless he took a full dose of some antispasmodic mixture, he could not sleep at all, owing to his spasmodic breathing. The remedy, among many that had been tried, which had afforded him the greatest temporary relief, was a mixture of equal parts of compound spirit of ether and compound spirit of lavender. The urine had been found normal.

The actual cautery had been applied to the back of the neck and he had been given large doses of chloral and atropine at different times, and continuously during several days, with only partial benefit. Singular to say, sulphate of atropine had been given him to the amount of one seventh of a grain (?) three times a day, according to the statement of the house physician, without appreciable physiological effects. This statement, it was needless to say, Dr. Robinson accepted very doubtingly—he believed that there was an error somewhere, or else that the drug employed was of very inferior quality.

Dr. Robinson regarded this case as very interesting, and in his experience it was a unique instance of spasm of the inspiratory muscles. The determining cause of the present attack was difficult to establish. What seemed most probable was that over-fatigue during the summer, added to an attack of suppressed perspiration (although unobserved), had brought it on. He thought it probable that the use of galvanism would prove of benefit.

[*Note by Dr. Robinson, October 28, 1884.*—The patient has much improved, but is not yet entirely relieved. His permanent improvement is possibly due to the use of moderate doses of iodide of potassium. Time also has been a considerable factor in bringing about the amelioration.]

Dr. ROBERT ABBE thought the disease was hysterical in character, being analogous to hiccough, and suggested the employment of will-power to control it, as he had seen this successful in intractable cases of the trouble referred to.

The case was considered a unique one by the members present, no one having seen anything just like it before.

A Peculiar Affection of the Finger Tips.—Dr. ABBE related a case of this sort, the patient being a man thirty-five years old, a driver. He had complained of pain in the tips of his fingers, and, beginning with the little finger, they had all successively become dark blue, as if going on to gangrene. This, however, did not ensue. There was pain in the palm, and the fingers themselves were hyperæsthetic. He had concluded that there must be some obstruction to the digital branches of the radial artery, and, on examination, this artery was found very small in the wrist, while the ulnar was enlarged. A history of syphilis was obtained, and a diagnosis of obliterating endarteritis was made. Iodide of potassium was given in full doses; in three days there was decided improvement, and in a week the blueness, which had existed for some weeks, was entirely gone. The finger tips had been distended, but there was no other œdema to be found.

Diabetes in Pregnancy.—Dr. GASPARD GRISWOLD referred to this subject, and related the case of a primipara whose urine, after albumin had existed in a moderate amount for a time and was gradually disappearing, was one day found with a specific gravity of 1.032, and, on testing for sugar, this was found to be present in considerable quantity. It persisted about a week and then disappeared spontaneously. There was no increase in the amount of urine, no thirst, or any other symptom of diabetes mellitus. In view of the statement sometimes made by writers on diabetes, that pregnancy never occurred during that disease, the case was of exceeding interest. He had found that Matthews Duncan had reported some similar cases—one in which a woman had sugar in the urine during her third, fourth, and fifth pregnancies, but no sugar at other times.

Dr. WALTER MENDELSON said that, as there were cases of albuminuria occurring in pregnancy in which no disease of the kidneys could be found, the cases being presumably of central nervous origin, the same explanation might hold good for cases of diabetes. Diabetes and Bright's disease were often associated in the same person, or were to be found in different members of the same family. The alternation of albumin and sugar in Dr. Griswold's case favored such a theory.

A Case of Face Presentation, in the mento-posterior position, was mentioned by Dr. J. H. EMERSON. Rotation was unusually rapid and easy, and the entire labor lasted less than an hour.

Miscellany.

THERAPEUTICAL NOTES.

Sulphate of Copper in Obstetric Practice.—The "Paris médical" publishes the following conclusions of M. Charpentier: (1) a solution of sulphate of copper, one to one hundred, is a most valuable antiseptic, especially in connection with midwifery; (2) the moderate price, absolute innocuousness, and convenient form of this substance are strong recommendations in its favor; (3) aside from its antiseptic properties, sulphate of copper is also a well-known astringent, so that it can be used as a substitute for persulphate of iron, over which it possesses the superior advantage of not retarding the healing of wounded surfaces. The solution may be used freely as an intra-uterine injection, without fear of unpleasant results; in fact, a rapid and steady recovery has followed its use in many cases of post-partum hyperpyrexia.

Iodoform in the Treatment of Tuberculosis.—Dr. R. S. Smith, in a letter to the "British Medical Journal," cites three cases in which he has made careful observations as to the influence of the iodoform treatment upon the *Bacillus tuberculosis*. In every case there were well-marked symptoms of phthisis—copious expectoration, rapid emaciation, and pyrexia, while the physical signs of consolidation were unmistakable. The sputa contained numerous bacilli. Iodoform was administered, in doses of one grain every four hours, and gradually carried up to two, three, and five grains, respectively. As a result of this treatment, the cough and expectoration ceased, there was a notable increase in body weight, and the physical signs were greatly improved. The bacilli, which had been noticed in such numbers at first, gradually disappeared from the sputa, until only a few remained. The writer acknowledges that these were selected cases, but he feels justified, from the evidence obtained, in assuming that iodoform really exercises a germicidal action upon the micro-organisms of tuberculosis.

Veratrine in the Treatment of Deafness of Labyrinthine Origin.—The following formula, suggested by Gruber, is published in the "Union médicale":

Veratrine.....	0.10	gramme;
Iodine	0.025	"
Iodide of potassium.....	1.00	"
Simple cerate	10.00	grammes.

In case of deafness due to exudation within the labyrinth, rub this ointment forcibly over the skin covering the mastoid process three times a day, for ten minutes at a time.

Clymer's Mixture for Asthma.—The same journal gives this anti-asthmatic remedy, suggested by Clymer:

Tincture of opium.....	4.00 grammes;
Sulphuric ether.....	8.00 "

Take fifty drops of this mixture every twenty minutes during the attack. Fifteen drops of the ethereal tincture of lobelia may be added to each dose.

An Ointment for Chromophytosis.—In the "Gazette hebdomadaire de médecine et de chirurgie" M. Vigier gives the following formula of an ointment for pityriasis versicolor:

Black soap.....	100.00 grammes;
Powdered pumice stone.....	50.00 "

Black soap, the writer explains, contains a considerable amount of potash; it forms with pumice a mixture having the consistence of simple ointment.

External Applications of Ether for Vomiting.—The "Paris médical" credits Dr. Galcedan with this suggestion. In a case of obstinate vomiting during pregnancy, after every remedy had been tried in vain, he applied some ether directly to the skin of the epigastrium. The effect was surprising; the patient inspired deeply several times, and ceased vomiting at once. Whatever may be the explanation of its action, this mode of treatment is certainly worth an extended trial.

The Treatment of Infectious Diseases with Intra-venous Injections of Iodine.—The "Wiener med. Wochenschrift" publishes a series of observations made by Dr. Van der Heyden, the results of which may be briefly stated as follows: In two cases of incipient cholera this method of treatment was quite successful; in more advanced cases, however, iodine injections produced no result. In three cases of lepra a marked improvement was observed. In typhoid fever a distinct diminution of the temperature followed the injections. The solution employed consisted of one part of iodine, two parts of iodide of sodium, and seven parts of water. Ten grammes was the amount ordinarily injected. Iodide of potassium was not used, because of the poisonous action which it seemed to exercise upon the heart muscle. In man, this intra-venous injection of iodine is easily effected by selecting the median vein. As a rule, no disturbance followed the injection, but in one case symptoms of collapse occurred.

The Action of Salicylate of Sodium on the Circulation.—Professor Maragliano publishes a series of experiments with this drug, the deductions from which are, briefly, as follows: Large doses of salicylate of sodium cause an increase of the ascending line of the pulse-curve, and an accentuation of the secondary rise of the descending line. The influence of the drug is not marked after three or four hours. The blood-pressure increases under the use of the salicylate. The conclusion is that the drug is absolutely devoid of the injurious effects upon the circulation which are generally ascribed to it.

Peritoneal Transfusion.—M. Hayem publishes, in the "Revue für Thierheilkunde," some valuable facts in reference to the injection of blood into the peritoneal cavity. The absorption, he states, is not dependent upon the amount of blood injected, neither is it influenced by the fact that the blood may have been obtained from an animal of a different species. The practical application of these facts is, that this method of transfusion offers a possible resource in cases of anæmia from severe hæmorrhage.

Hippurate of Lime.—Dr. Poulet publishes a long article on this substance in the "Gazette hebdomadaire de médecine et de chirurgie." His conclusions are that the drug seems to have a specific action in affections of the urinary organs, in diseases of the liver, in some skin affections dependent upon hepatic derangements, and, lastly, in certain digestive troubles. The formula which he suggests is as follows:

Hippuric acid.....	100.00 grammes;
Lime-water.....	q. s.;
Hot water.....	2 litres;
Sugar.....	2,400.00 grammes;
Tincture of lemon.....	15.00 "

The hippuric acid and lime-water are to be mixed with hot water until the reaction is no longer acid. Then add the rest of the water and the sugar. The dose is four drachms, to be taken two or three times a day.

Hydrochlorate of Apomorphine in Hystero-Epilepsy.—M. Laurentin, interne des hôpitaux, writing in "Lyon médical," states that he has employed subcutaneous injections of hydrochlorate of apomorphine in the treatment of this affection, with excellent results. He employed a solution consisting of fifteen centigrammes of the hydrochlorate and thirty grammes of distilled water. Two injections generally sufficed to cut short an attack. In closing his paper, the writer refers to successful cases reported by Wallender, Riegel, and Gower.

Different Uses of Cocaine.—Freud, in the same journal, summarizes the indications for this drug as follows: 1. As a stimulant in cases of bodily exhaustion. 2. In digestive troubles. 3. In the cachexia. 4. As a remedy in the treatment of the morphine and alcohol habits. 5. In asthma. 6. As an aphrodisiac. 7. To induce local anæsthesia.

A Topical Application for Warts.—M. Vigier, in the same journal, recommends the following formula:

Salicylic acid.....	1.00 grammes;
Alcoholic extract of <i>Cannabis indica</i>	0.50 "
Alcohol.....	1.00 "
Ether.....	2.50 grammes;
Flexible collodion.....	5.00 "

[Substantially, the foregoing is a well-known application for corns, and a very efficient one.]

Non-expert Testimony in Insanity Cases.—A ruling of the United States Supreme Court, the highest judicial authority in the country, on the question of the relative value of expert and non-expert testimony as to insanity, will be of interest to the profession. In a recent case, where the Connecticut Mutual Life Insurance Company was defending a suit on the ground that the policy-holder had killed himself when sane—a condition whereby the company was released from liability—the Court gave the following opinion: "Counsel for the plaintiff in error contends that witnesses who are not experts in medical science may not, under any circumstances, express their judgment as to the sane or insane state of a person's mind. This position, it must be conceded, finds support in some adjudicated cases, as well as in some elementary treatises on evidence. But, in our opinion, it can not be sustained consistently with the weight of authority, nor without closing an important avenue of truth in many if not in all cases, civil and criminal, which involve the question of insanity. Whether an individual is insane is not always best solved by abstruse metaphysical speculations expressed in the technical language of medical science. The common sense, and, we may add, the natural instincts of mankind, reject the supposition that only experts can approximate certainty upon such a subject.

"There are matters of which all men have more or less knowledge, according to their mental capacity and habits of observation—matters about which they may and do form opinions sufficiently satisfactory to constitute the basis of action. While the mere opinion of a non-professional witness, predicated upon facts detailed by others, is incompetent as evidence upon an issue of insanity, his judgment, based upon personal knowledge of the circumstances involved in such an inquiry, certainly is of value; because the natural and ordinary operations of the human intellect, and the appearance and conduct of insane persons, as contrasted with the appearance and conduct of persons of sound mind, are more or less understood and recognized by every one of ordinary intelligence who comes in contact with his species. The extent to which such opinions should influence or control the judgment of the Court or jury must depend upon the intelligence of the witness, as manifested by his examination, and upon his opportunities to ascertain all the circumstances that should properly affect any conclusion reached. It will also depend in part upon the degree of the mental unsoundness of the person whose condition is the subject of inquiry, for his derangement may be so total and palpable that but slight observation is necessary to enable persons of ordinary understanding to form a reasonably accurate judgment as to his sanity or insanity; in other cases the symptoms may be of such an occult character as to require the closest scrutiny and the highest skill to detect the existence of insanity."

Lectures and Addresses.

CONSERVATIVE PROGRESS.

THE PRESIDENT'S ANNUAL ADDRESS.

DELIVERED AT THE FIRST ANNUAL MEETING OF THE NEW YORK STATE MEDICAL ASSOCIATION,
NOVEMBER 18, 1884.

By HENRY D. DIDAMA, M. D.,
SYRACUSE.

THE advance of science is hindered not more by obstinacy than by fickleness. The skepticism which uses an honest crucible is a blessing; the skepticism which wields a club, and smashes old things indiscriminately *because* they are ancient, is a curse. Underneath its destructive malice is often a credulous and craven tenderness for anything which is new. One face of Janus was emblematic of Memory, and looked benignly upon the past, with its garnered treasures; the other represented Hope, and peered eagerly into the rich possibilities and promises of the future. These faces were not mutually inimical; they were complementary; they were unity in diversity. In medicine, bigotry and laziness sometimes call themselves conservative; opposed to these are discontent and love of novelty, which may assume the label progress; but genuine progress and enlightened conservatism work harmoniously together to perfect medical science; the one patiently tests all things; the other holds fast that which is good. In medicine much is worthy of conservation; not a little is still moot; research is very active and confident; vast fields await exploration. Your attention is invited to a few illustrations and suggestions.

In *pathology* the predisposing causes of disease are fairly well known by long and careful observation; but in the dazzling field of the microscope they are apt to be forgotten. Inheritance, acquired vices, insufficient, or improper, or excessive food and drink, vitiated air, deficient sunlight, exposures, indolence, overwork, worry—these are predisponents which act by so impairing the resisting power that attacking foes of feeble potency are able to gain an easy victory.

Many diseases, such as eruptive, contagious, and malarial fevers, pneumonia, consumption, erysipelas, septicæmia, pyæmia, and even suppuration, are now quite generally regarded as the work of micro-organisms—the *contagium vivum*.

The doctrine of germs is essentially modern, although Harvey is thought to have had glimpses of its truth more than two hundred years ago. But Harvey never regarded germs as living particles, capable of prolific multiplication; he considered the emanations from a certain disease able—by what he called a seminal influence—to propagate the same disease in a healthy person.

The witty Jonathan Swift, in the early part of the last century, described a microscopic specialist whose enthusiasm is hardly eclipsed by the zeal of any modern observer. He had discovered worms in the flesh of certain diseased animals, and he published an account of his observations. His paper attracted some attention and received favorable

comment. Inflated with flattery and vanity, the now famous discoverer continued to use his lens, and forthwith published the startling announcement that worms were the fountain and origin of all diseases.

In the present germ excitement—analogous to the gold fever of 1848 and the petroleum craze of later years—we are not to ignore other and well-established causes. We encourage the search for new *microzymes*, as we do prospecting for gold and oil; we watch intently each promising indication; but we prudently reserve our credence and wait for verifications of alleged discoveries, knowing that some observers have that keen vision pointed out in the couplet:

"Optics sharp it needs, I veen,
To see what is not to be seen."

We not only twine fadless chaplets for the modest brows of those who unearth a new *bacillus* whose pedigree can be established beyond question, but we bestow our admiration upon those ingenious philological microscopists who, if they can not diagnose hereditary diseases by the physiognomy of the blood corpuscle, are yet able to invent some magnificent name for the minutest pest which infests the human organism.

We urge that investigation can not be too extensive and thorough; but we counsel that there be no premature rushing into print with generalizations, lest the observations shall turn out illusory, lest alleged causes shall prove to be but unimportant coincidences.

The reward for patient work may be slow in coming, like the flour from the mills of the gods, but it will be of excellent quality at last.

If he is worthy of national gratitude who makes two blades of unnecessary grass grow where but one had a feeble struggle for existence before, how much more deserving of temporary immortality is he who establishes his claim to a new *cacozyme*, be it *bacillus*, or *micrococcus*, or *spirillum*, especially if he can tell us what to do with it!

The specific micro-organisms of tuberculosis and splenic fever and, perhaps, cholera have been differentiated; those of miasmatic diseases, seen as the *palmella* in Ohio by a genius of sharp optics, and as a *micrococcus* by Italian observers, remain to be verified. There should be little doubt of their existence, notwithstanding the incredulity recently expressed by an eminent writer who still pins his faith to the ancient notion that a poison is generated by decomposing vegetation. For, while a living and developing organism will account for all the facts of origin, incubation, and behavior of miasmatic fevers, a dead poison is quite unsatisfactory and insufficient.

But the germs which cause scarlatina, measles, pertussis, etc., have thus far eluded search. It is still an undecided question whether croupous pneumonitis is a germ fever with a local expression.

The suggestions of our eminent friend and associate who called attention to this point several years ago are entitled to, and are receiving, consideration throughout the world. Continued observations are still needed to confirm or overthrow the proposition.

In *therapeutics* conservative progress finds an ample

field. To prevent; to guide to a favorable termination, when prevention has been neglected; to alleviate, when recovery is impossible; to delay the inevitable escape of the soul from its weary prison—these are the important duties of the physician.

A thorough knowledge of the composition and structure of the body, and of the relation of parts, is indeed of great importance. The action of organs in health and their perverted action in disease rightly demand the most careful study.

The foes which boldly attack the citadel of life, and the occult influences which insidiously undermine and sap the vital forces, these may well engage our earnest attention. The fascinating analysis of our secretions and excretions, of our foods and medicines and poisons, deserves all the consideration which it receives.

The innumerable instruments of precision, which promise to substitute mathematical accuracy for vague guess, and which are too often used not to supplement but to supplant other and valuable methods of investigation, these, like the tribe of Abou Ben Adhem, will continue to increase till they become multitudinous—if not perplexing—like the grasshoppers of the West; these rightfully challenge recognition and study, while with unappeasable appetite they devour our substance if we attempt to add them all to our armamentarium.

But anatomy and histology, physiology, pathology and chemistry, ætiology, diagnosis, and prognosis; the possession of all the scopes, all the graphs, and all the meters, and the familiar and dexterous use of them—all these, interesting as they may be to the scientist, important and indispensable as they may be as preliminaries, foundations, and aids to medical skill, all these are practically worthless except as they contribute to the relief of human suffering.

"The real physician," says Broussais, "is the one who cures; the observation which does not teach the art of healing is not that of a physician, it is that of a naturalist."

And, paraphrasing Sacred Writ, it may be added: There remaineth therefore Pathology, Diagnosis, Therapeutics, these three; but the greatest of these is Therapeutics.

Therapeutics, then—which includes all means to prevent and manage disease—being the superstructure to which all medical ologies are but foundation-stones and adornments, the very fruitage of the tree of life, the sole beneficent application of all medical science, its importance to humanity, and therefore to the physician, can not be overestimated.

Efforts to elevate the standard of medical requirements are worthy of commendation. Owing to the fierce rivalry of schools and the facility with which incompetence secures its diploma, it has been deemed very important, by many reformers, to have the licensing power placed in the hands of an independent board of examiners.

Should such a board be constituted, it may properly require a thorough preliminary training; it may be so comprehensive in its demands and so vigorous in its examinations that no one guilty of ignorance regarding the fundamental branches of medical and other cognate sciences shall be able to gain admission to the ranks of a noble profession. But if, in these exalted demands and these exacting

examinations, therapeutics is ignored or belittled; if therapeutics is not elevated to the highest position and regarded as the one thing needful, the very vital principle without which everything else is but dead and useless science, and with which alone the physician does all his skillful deeds of benevolence; then the ordeal to which the candidate is subjected is delusive and beggarly. It may even deserve reprobation. The object of a board of examiners should be to protect the community from the ravages of additional incompetency. Its action must of necessity be prospective. It can not hope to uproot a professional ignorance which, associated with length of years and engaging manners, has become popular and almost sacred.

But it can determine the minimum amount of knowledge which must be possessed by every candidate who shall gain admission to the medical fraternity. If its examinations shall be comprehensive and searching, and at the same time not so narrow and technical as to regard an error in orthography less excusable than a gross blunder in medical practice, it may accomplish its good purpose.

But if it tithe, rigorously, the mint, anise, and cummin, and neglects the weightier matters of applied medical science; if it shows partiality, allowing Vitreus Cæruleus, who believes the radiance which filters through blue glass to be the only and omnipotent remedy for all diseases; and the gushing Aquarius, who dotes on and swears by magnetized spring-water as a panacea; and the innocent Credulus, who puts all his faith in faith alone; and the oily and plausible Sinbad, who pretends to be under the guidance of disembodied spirits—if the board allows these to shirk entirely the examination in therapeutics and materia medica to which plain, unpretending Medicus—who recognizes the importance of these sciences—is subjected, then when it puts these five on the same high level before the public, giving each the same indorsement and the same license, it inflicts a wrong on Medicus, places an unnecessary and useless burden on Cæruleus, Aquarius, Credulus, and Sinbad, and perpetrates a fraud on a confiding and misled community.

To serve the public wisely and well, the board should subject every applicant, whatever his callow crotchets, or prejudices, or intentions may be, to the same examination in every branch of medical science, as understood by the vast majority of the profession. Possessing the learning requisite to pass this examination, and endowed with his credentials, the tyro should be at liberty to adopt and practice any special delusion or idiosyncrasy which his fancy may indicate, or the credulity of the public make profitable. For, as he can never entirely divest himself of his useful knowledge, the community will have all the protection it is possible for an examining board to furnish.

Some of the general principles of therapeutics are worthy of the most careful preservation. Many of the measures employed in preventing and stamping out various so-called zymotic diseases are fairly successful; and constant research is adding largely to their numbers and potency. The importance of iodine and mercury in certain diseases; the palliative and curative effect of opium in a variety of complaints; the efficacy of Peruvian bark in miasmatic

affections; the desirability and possibility of preventing and subduing high temperatures in fevers and inflammations; the wonderful results secured by certain heart tonics; the neutralizing and eliminating measures which have shortened the term of rheumatism from six weeks to six days; the undiminished power for good of ferruginous preparations in suitable cases; the occasional utility and even saving power of the once abused and now as much maligned venesection—these are merely samples of therapeutic principles and practice whose truth is attested by countless critical, level-headed observers throughout the whole world.

New discoveries in ætiology, pathology, and *materia medica* will modify our views and constantly increase our ability to overcome disease. They will show us when to interfere actively, and when to watch and wait. And, while we hold fast to well-founded principles of treatment and to remedies whose adoption has been tried, we give a hearty welcome and testing to every new measure, to every new medicine, which has a satisfactory indorsement. We are hampered by no dogma; so that, while we are not seduced by utopian theories, while we make no experiments with obvious and gross delusions, and while we set our faces like flint against fraudulent pretenses and practices, we carefully consider every promising suggestion, by whomsoever made, and we gladly adopt every useful discovery and every tested new application of old principles and remedies.

Is not this platform broad enough to afford standing and working room for every one who seeks to know and practice truth?

It is fashionable in certain quarters to decry the medical schools of our country; to censure their practice of so oiling their portals that the grossest ignorance can find an easy and welcome admission; to inveigh against their methods of teaching; and to condemn the facile, if not farcical, examinations which permit incompetence to seize a title and go forth to prey upon the community.

Indiscriminate and unmixed reprobation is not only unjust; it defeats its purpose. For whatever may be the deficiencies of our great schools, however far they fall short of what they can and should be, they have excellences which should not be ignored. They have given to the profession men renowned throughout the world for their wisdom and skill. In their corps of teachers are many whose aptness and industry and ability are unsurpassed. They afford clinical opportunities so rich and varied as to leave nothing to be desired.

If their requirements for entrance and exit have been too low, is it not because the profession have not demanded higher? If the terms have been too short and the years required too few, and the methods unnatural and deficient, is it not because the profession have given little practical encouragement to the hearty, even if too speedily abandoned, attempts which some of the schools have made to secure needful reform?

Can it be doubted that the accomplished and devoted teachers in the schools are always ready and willing to respond to any earnest call of the profession for a higher standard? Shall this call be made? Will those who make the demand prove their sincerity by pledging their influ-

ence, their aid, and comfort to those schools which, at whatever labor and expense, shall eliminate the faults of the present system, and bring it into harmony with the teaching in all institutions of learning, and with the law of mental evolution and growth?

That brilliant results have been achieved under the prevailing system of medical teaching has not been, and can not be denied. Would they not have been still more brilliant and satisfactory under a better system?

The native Ceylonese, with instruments which would hardly be tolerated in an American blacksmith's shop, sits on the ground and patiently fabricates jewelry and filigree which are marvels of exquisite delicacy and beauty. Retaining his present artistic taste and skill, how much more and better work could he do with the perfected instruments of his civilized brother!

The superiority of the graded system of medical training is not universally acknowledged. At least one prominent teacher and one good medical journal openly profess not simply a contentment with the present unnatural system, but an admiration for it, and a desire to have it conserved. The attempts to reduce chaotic elements to order they denounce as impracticable, and they kindly predict and counsel their early abandonment.

Proposed reforms always provoke some opposition. The attempt to introduce into Mexican farming such modern implements as the steel plow, the cradle, the reaper, and thresher is earnestly combated by many of the native workers. They not only adhere to the sickle and to the old one-handed Palestine plow—an iron-shod stick which barely scratches the soil—and to the threshing-floor, where oxen and mules tread out the grain, but they insist that this clumsy system is the better. They bill their corn as our own farmers did fifty years ago. They use a hoe in the operation, but the hoe has no handle, and the native partly creeps and partly jumps, like a kangaroo, from hill to hill, as he goes through the field. Still he loves and reveres the old ancestral implement. He denounces the handle as a device to promote laziness. And he asserts that, with a primitive hoe in each hand, he can do more and superior work. It was only by compulsion that these earnest Mexican conservatives could be brought to use wheelbarrows on the public works. They preferred to carry their loads of stone and dirt on their backs and heads. And such was their devotion to their ancient method that at first they actually shouldered the wheelbarrow, dirt and all, and then vociferously condemned the new notion as a fraud and nuisance.

Honest differences of opinion should be treated with respect and tenderness. And, since these differences exist regarding medical education, it may not be unprofitable briefly to compare and contrast the antique system with the modern.

Most of you know, from personal experience, that in the large majority of medical schools in this country the student, at the very outset, is expected and required to hear lectures on all the branches taught—the most advanced as well as the elementary—every day. Although not usual, the occurrences to be described are by no means impossible.

An ingenuous youth, full of zeal, industrious, ambitious, but with scant knowledge of the elements of the most moderate education, is received without question at the grand old conservative college. He matriculates. He attends a lecture on anatomy—the first he ever heard of this important subject. He is delighted. He enters the laboratory and listens with pleasure and profit to the professor of chemistry. Truly, he says to himself, the ways of wisdom are ways of pleasantness, and all her paths are flowery walks of peace.

He hastens into the surgical department. The lecture is introductory. But in a few days, and while his knowledge of anatomy is still limited to an awful admiration for the suspended skeleton and for the tray of disarticulated bones on the table, the subject of the lecture is aneurysm.

The bright description, the lucid explanation, make the whole subject interesting and satisfactory. The eloquent professor describes the operation for ligating the radial artery in its lower third: "Hold the hand supine; make an incision two inches long on the radial side of the *flexor carpi radialis*. The integument and aponeurosis being laid open, the artery is at once brought into view."

This is all clear enough to you, learned Fellows, because you have received sufficient anatomical instruction. But the fresh pupil whom we are considering—one of us perhaps—whose hopes but a few days ago were radiant and towering, becomes perplexed and disheartened, if not disgusted, because he has no knowledge of what radial may mean, whether aponeurosis is an animal or vegetable, or whether the *flexor carpi radialis* is bone, nerve, or sinew, situated on the crown of the head or the sole of the foot.

After the wearisome—wearisome because incomprehensible—incomprehensible because the student has not been prepared to understand it—lecture on surgery is ended, the still plucky pupil ventures into the room where the professor of the art of medicine is showing how insufficiency of the tricuspid valve, by obstructing the onward flow of blood in the *vena cava*, may cause congestion of the portal system, and then gastric catarrh, hæmorrhage, and albuminuria. He does not doubt the truth of the demonstration. But it loses all its beauty and force because the poor fellow has not the slightest notion of what the tricuspid or any other valve may be, or where the *vena cava* or portal system is located.

In the obstetric department the same failure to comprehend the lecturer results from the same want of preparation. But the rules of the school require attendance on all the lectures. And so, hour after hour, every day is wasted, by an earnest and ambitious student, in listening to what he can not understand, and so neglecting the studies which are prerequisite.

The short winter course is passed, and the student emerges in the early spring, with a head full of jumbled and meaningless words, with muddled ideas of medicine, obstetrics, and surgery, and with insufficient knowledge of anatomy, physiology, and chemistry, because the time which should have been devoted to these fundamental studies has been frittered away in a dazed attendance on lectures he had never been prepared to understand. The next winter

he goes through exactly the same course, but he is now better able to comprehend the teaching.

In *building a dwelling house*, you prepare a plan—first consulting the good wife regarding the fitness of things—and then you go ahead decently and in order. You lay the foundations deep and broad and strong. You carry up the superstructure carefully and gradually, so that no cracks nor flaws shall afterward appear. You put on the roof, finish the rooms honestly, without veneer or graining, and wait a sufficient time before you move in with your family. You do not jumble all together, working an hour on the turret, another on the trench for the cellar-walls, and still another on window-sills and hard finish and joists and rafters.

If you were to *train for an athlete*, you would not unwisely overstrain your sinews the first day by doing work beyond your ability. You would begin with light weights and moderate walks, increasing the labor each day as the muscles became developed and strong.

In his attempt to *make an accomplished musician*, the wise teacher first trains the fingers and wrists of the pupil, and requires much practicing of the exercises and scales, till all the fundamentals are thoroughly mastered. He does not allow the aspiring youth to practice the rudiments in the forenoon, and then in the afternoon murder the symphonies of Beethoven, or attempt to render the brilliant lunacies of Wagner, at the very outset of his career.

If it should be proposed to *evolve a mathematician* out of raw material, we would not ask the candidate the first day to solve the problem of the hare and hounds, nor to listen to a demonstration of the twelfth proposition of Euclid. We would begin with the simplest examples in addition and subtraction, and then advance through the higher and still higher departments, till at length, like Le Verrier, the fully developed candidate could discover and locate a planet by pure mathematical calculation.

In *training a child to be a linguist*, we begin with the simplest form of speech and lead him on, by precept and example, till he can speak with the tongues of men and of angels, and have charity besides. It would be unnatural, and therefore unwise, to allow him to waste time at the start in listening to the sounding brass of Cicero's orations, or the tinkling cymbals of Xenophon's fables.

If in every other department of human industry the natural development plan is pursued without opposition or question, why should medical education be the marked exception? Why, if we wish, as we ought, to *utilize to the utmost the time and talents of a medical student*, should we not take him step by step—for that is what the graded course means—through anatomy and physiology, histology and chemistry up to surgery, and practice and obstetrics? Why should we have him fritter away the scant but precious hours of his first course of lectures in listening to what he can not by any possibility fully comprehend? Would not this be doing what ought not to be done, and leaving undone what ought to be done?

The natural system of medical education is no longer a beautiful and dreamy speculation. It has been fairly tested, and it has been found efficient. Those who know it best

give it the heartiest approval. The requirements for matriculation are, or should be, more and more exacting every year. The written and oral examinations are frequent and thorough. The yearly and final ordeals are very trying and severe; but the students who have brains, application, and faithfulness, always come through triumphantly. Even those whose natural capacity is not the greatest succeed remarkably. Under a natural system their mental growth is rapid and astonishing. At the last they seldom fail, because their time has been husbanded and properly employed, because their studies have been interesting and delightful, inasmuch as they have been thoroughly comprehended and mastered, every step of the way.

Here are two pictures. Do they not represent the prominent differences in requirements and results between the ancient, but still prevailing system, and the modern one?

In one case no preliminary examination; only two short courses of lectures required, the second identical with the first; the novice required to attend lectures on every subject every day, neglecting preliminary work because the time which might have been devoted to it has been worse than wasted in hearing learned talk which he was not prepared to understand; valuable clinical and laboratory opportunities; no examinations to advance to higher grades, for there are no grades; a final examination which is so superficial in many instances as to be little better than a farce, and whose meshes are large enough to let mediocrity and inferiority, as well as the superiority which is always present, pass through with the greatest ease.

In the other case preliminary examinations which require a certain, even if insufficient, preparation; three years of training at the college, the novice beginning at the beginning; all his time employed in hearing and doing what he can and should understand; his capability and progress tested by frequent oral and written examinations; his advance from grade to grade checked if his fitness is not established; valuable clinical and laboratory opportunities; searching yearly examinations; and a final examination, which, although of great severity, does not, except in rare instances, result in rejection, because the student has been educated in a way which accords with nature and does not violate it.

Of these two systems, judge ye which is the better.

And yet the difference between the old system and the new is greatly one of arrangement. A change from one to the other can be effected with as little commotion as was noticed when twenty discordant and puzzling computations were consolidated into the present admirable system of standard time.

No more teachers would be required; no better lectures could be delivered, or would be needed. The labors of the professors would be considerably increased because the total length of the lecture season would be more than doubled, but they would hardly be conscious that a radical change, amounting to a revolution, had taken place. But the students, who are to be the physicians of the future, and the confiding patients of these physicians, would derive incalculable benefit.

Would not the adoption, by all the schools of this country, certainly by those of this State, and especially by the three prominent ones in this medical metropolis, of the natural system, with the honest and vigorous enforcements of its entire demands, secure a practical elevation of the medical standard, so much yearned for, deserve the support of the profession, and restore a confidence which has been seriously impaired? Would not this adoption protect the community to the greatest extent possible from incompetence, and render unnecessary, so far as legitimate medicine is concerned—the only medicine about which we have any solicitude—the proposed State board of incongruous medical examiners?

And now, Fellows of the Association—good fellows and patient, one and all—I thank you for the very great, and, of course, unsought honor—for it would not be an honor if I had sought it—you have conferred in choosing me to be your first presiding officer. I confidently count on your kindly forbearance and your generous assistance. I congratulate you that our first meeting begins so auspiciously; that the promised material for our coming three days' scientific festival has never been surpassed in richness or variety. I cordially invite each and every one to contribute to the success of the feast.

Original Communications.

HAY FEVER AND ITS SUCCESSFUL TREATMENT.*

BY CHARLES E. SAJOUS, M.D.,
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COLLEGE, PHILADELPHIA.

At a meeting of the Philadelphia Laryngological Society, held on the 23d of last November, I read a paper entitled "Notes on Hay Fever," which was published on the 22d of the following month, and reported a series of cases in which the accesses were prevented by what might be termed organic alteration of the surface of the nasal mucous membrane.

In the contribution herewith presented I am obliged to quote largely from that paper. I must state, however, that a number of cases have been added to the list, and that close observation has furnished me valuable information which has led me to doubt some conclusions arrived at at the time, while strengthening others.

In the spring of 1881, while investigating, at the Jefferson College Hospital, the merits of glacial acetic acid in the treatment of intra-nasal hypertrophies, I came across two patients who stated, in the course of their general history, that they were subject to hay fever. Both had middle turbinate hypertrophies, complicated in one case with a posterior growth, causing complete stenosis of the left naris. Glacial acetic acid was used to destroy the anterior growths, while the posterior was extirpated with Jarvis's snare. Bearing the hay-fever history in mind, I applied the acid over a

* Read before the American Laryngological Association, May 14, 1884.

much greater surface than was necessary for the destruction of the hypertrophies, hoping by this means to diminish the sensitiveness of the mucous membrane, primarily affected in the course of the hay fever, and if not prevent, at least diminish, the intensity of the accesses. When the time came for the hay fever to manifest itself I watched the cases closely. The symptoms did not recur.

In studying the *modus operandi* of the treatment in bringing about such a result, we must adopt the generally accepted theory that hay fever is due to an idiosyncrasy on the part of certain individuals to become affected by certain emanations. The experiments of Blackley show that the pollen of the majority of plants is the agent that produces the impression on a system sensitive to its action, and that, this pollen being disseminated throughout the atmosphere at certain fixed seasons, the symptoms present themselves only at fixed seasons.

That this is the true theory seems to me beyond a doubt, for without it we can not explain the regular recurrence, and why this recurrence should take place just at one time and not at another. Still there are cases in which dust, for instance, will cause an access, the symptoms being those of a severe coryza. But, if we bear in mind that the nasal mucous membrane of persons affected with the idiosyncrasy of hay fever is in a state of chronic hyperæsthesia, we can easily understand why an irritant will cause in those persons much more violent symptoms than in others in whom the idiosyncrasy does not exist. Every nose is more or less irritated by dust, and the degree of irritation is in proportion to the degree of sensitiveness. Others are influenced by the emanations of certain drugs; in these the idiosyncrasy is not limited to pollen, but includes those substances that will cause an access.

Some authors have of late advanced the idea that malformation of the nasal cavity, either congenital or through hypertrophic changes, might be the cause of the manifestation, either by reflex action or by interference with nasal respiration. That such malformations have great influence as to the intensity of the manifestation is, I think, very certain, but it seems evident to my mind that they do not act as a cause. If such malformation were necessary, how could we explain the occurrence of an access in those cases in which no such malformation exists?

Mrs. A., aged thirty-eight, had been subject to hay fever for eleven years. Her attacks lasted four weeks, and were accompanied with severe asthma. She tried all nostrums recommended to her, including patent medicines; nothing seemed to help her, excepting a trip either to the sea-shore or to some elevated region, when the access would cease at once. A trip interfering greatly with her household duties, she was anxious to be delivered of her yearly punishment. She placed herself under my care three weeks prior to her last access, with premonitory symptoms, violent sneezing on rising already very evident. Careful examination revealed an unusually spacious and healthy nasal cavity, verifying her statement that, with the exception of her hay fever and a slight coryza when she inhaled dust, she never had trouble with her nose, and could breathe freely through it. Applications of the galvanic cauterium were immediately begun, and repeated until the membrane covering the middle and inferior turbinated bones and the lower half of the sep-

tum had been well singed. The premonitory sneezing stopped at once.

This case, with two others in which no malformation or intra-nasal hypertrophy sufficient to cause any degree of pressure existed, shows clearly that pressure can not be adduced as a cause. As to interference with nasal respiration in the course of an access through partial or complete stenosis induced by the engorgement of the nasal corpora cavernosa, I can not see clearly how it can be considered as a cause, since the engorgement is secondary to the cause of the exacerbation.

I am of the opinion that a permanent hyperæsthesia of the nasal mucous membrane exists in persons in whom an idiosyncrasy to become affected by the pollen of flowers or certain irritating substances is present, and that, as was the case with the two patients treated three years ago, the destructive agent employed had induced an organic transformation on the surface of that membrane which destroyed that morbid irritability attended the nervous filaments distributed over it. In other words, they had so altered those parts primarily affected in the course of an attack that they were no longer sensitive to the foreign elements acting as an exciting cause.

As an illustrative case, I will cite that of a young lady whose accesses had appeared regularly for several years. The applications not only prevented the symptoms, but made her nasal membrane absolutely invulnerable to the effects of pollen and other irritants. As a test, she exposed herself as much as possible to the emanations of the plants which she knew to be the most liable to occasion a manifestation of her idiosyncrasy, and went even so far as to place bouquets in her bedroom, and to approach a field of clover, her most dangerous enemy.

Had the idiosyncrasy itself yielded to the treatment, or had it ceased to exist in the patient? Neither can be the case, for one of the symptoms, palpebral pruritus, occurred, showing that the idiosyncrasy still existed in the patient, but that the organic alteration in the nasal membrane had annulled its liability to infection, thus preventing all symptoms secondary to its abnormal irritability, but not that manifested in the palpebral conjunctiva, which was irritable *per se*, and had not, of course, been cauterized.

The applications were made principally over the surfaces of the lower and middle turbinated bones and the portion of the septum corresponding with those surfaces.

The mucous membrane covering these parts is supplied by the inferior nasal branches of the large palatine nerve, which is derived from the sphenopalatine ganglion. They enter the nasal cavity through foramina in the palate bone. Now, the sphenopalatine ganglion possesses, besides its motor and sensory roots, a sympathetic root which is derived from the carotid plexus through the Vidian, and forms the connecting link between the nasal membrane and the sympathetic system, establishing an intimate and direct inter-communication between that membrane and the sympathetic system, through the largest of the cranial ganglia.

Organic alteration of the area over which its branches are distributed, preventing a manifestation of the idiosyncrasy, and the near proximity of this ganglion, explain, it

seems to me, that it is through it that the impression which gives rise to what remote symptoms the patient may be liable to is transmitted to the general system. Thus we can trace a direct connection with the lungs, in relation with the frequently present symptom, reflex asthma; the superior cervical ganglion, from which the branch forming the carotid plexus is derived, is connected with the inferior ganglion of the trunk of the pneumogastric, which involves the whole of the fibers of that nerve, with the exception of one, while in the thorax the posterior pulmonary plexus is not only formed by branches of the sympathetic, but also by some from the pneumogastric, and the two thus combined follow the ramifications of the air-tubes. Here their course is dotted with small ganglia, and their filaments become lost in the minute unstriped muscles of the bronchial tubes which were shown by Salter to cause, when thrown into a state of activity, the mechanical contraction which gives rise to the asthma.

In passing, let me state that this author says that "asthma consists of a perverted sensibility of the nervous system in its transmitting on to the muscle as a stimulus to contraction that of which it should take no cognizance. . . . The vice consists not in the production of any special irritant, but in the irritability of the part irritated."

To asthma as a symptom of hay fever this theory can be well adapted. The affection first manifesting itself in the nasal mucous membrane, this, then, is the seat of that morbid irritability; from it is transmitted through the nervous system that which causes spastic contraction of the fiber-cells of the organic muscles in the bronchial tubes.

I alluded to the influence exerted by intra-nasal malformations, either congenital or due to hypertrophic changes, on the intensity of the manifestation. A number of cases have been reported in which the accesses were avoided by the removal of hypertrophies. I am inclined to believe that the destruction of these hypertrophies was but of secondary importance in the effect produced, and that the organic changes occasioned by the cautery in the mucous membrane altered its hyperæsthesia. I am far, however, from considering malformations as innocuous in the history of the affection. I am so penetrated with the idea of their importance that I invariably resort to surgical procedure if they induce pressure or prevent the thorough application of the galvano-cautery. We are all familiar with the reflex asthma of some cases of nasal polypi, caused, in my opinion, by pressure on the branches of the sphenopalatine ganglion, and transmitted to the lungs as described a moment ago. Bearing their occurrence in mind, we certainly can accept the fact that asthma can be caused by the pressure of an engorged hypertrophied mucous membrane in the course of the violent inflammation engendered by the irritant to which the patient is sensitive. The asthma may even be kept up long after the other symptoms have ceased, hypertrophic changes in the membrane and the bones having been sufficiently developed to induce constant pressure, as in the following case:

Dr. H., a prominent Catholic clergyman of Philadelphia, had had regular annual attacks of hay fever for about twenty years. His last had been unusually severe,

and was followed by asthma, which, instead of disappearing as formerly, remained, manifesting itself especially after he had been in the recumbent position for some time. Examination revealed almost complete stenosis of the left naris, due to pressure of the septum. The latter, however, was not deviated sufficiently to account for the narrowness of the chamber, but was found, by means of the septometer, to be over a quarter of an inch thick at the point of closest contact. What hypertrophied tissue could be reached was cauterized without, however, inducing much change. I then concluded to diminish the abnormal thickness of the septum, which was done by passing the bur of the surgical engine under the mucous membrane and holding it in contact with the vomer until about half of its thickness had been removed. A free passage for the air was established and the contact relieved. The asthma disappeared.

In another case a prominence in the middle of the septum was reduced by the file, this also being passed under the mucous membrane.

If there is a deviation of the septum, and this interferes with the proper application of the cautery, I as much as possible correct the deformity. Hypertrophies are destroyed with the snare or cautery, according to their location.

In my early cases I used glacial acetic acid, but I had to abandon its use because, in order to obtain satisfactory results, it had to be applied repeatedly over an extensive surface, giving rise to much pain. The galvanic cautery serves me better, requiring but few applications, and being painless if properly used. I apply the cautery-knife with its flat side on the surface of the membrane, repeating that procedure in as many sittings until the whole surface extending over (and as much as possible under) the middle and inferior turbinated bones is well singed.

It would seem that such a radical alteration of the nasal membrane would occasion either a loss of, or at least impair, the sense of smell. This is not the case if the applications are properly made. The "olfactory membrane," which in man is yellow, covers the upper part of the septum, the superior turbinated bone, and the upper part of the middle turbinated; it is consequently but slightly involved in the treatment. On the contrary, olfaction is often improved by it, the reduction of the tumefaction facilitating the passage of air, and consequently that of the odoriferous particles. I have never had the least bad result, the treatment being successful and permanent in every case when thoroughly applied.

As a *résumé*, I would submit the following:

That hay fever is an idiosyncrasy existing in certain individuals, to become influenced by certain emanations or irritating substances.

That the idiosyncrasy is accompanied by a chronic hyperæsthesia of that part of the nasal mucous membrane covering the inferior and middle turbinated bones, the middle meatus, the floor of the nose, and that part of the septum below the limit of the olfactory membrane.

That organic alteration of those parts annuls that hyperæsthesia, preventing at the same time what symptoms the patient may be liable to in the course of an access.

That any destructive agent will induce that organic alteration, but that the galvanic cautery is by far the best, being painless, effective, and devoid of all danger when used in practiced hands.

That, in order to obtain a satisfactory result, a sufficient number of applications must be made, covering the entire extent of the over-sensitive surface, without which the result will be doubtful.

Now, gentlemen, permit me to state, in conclusion, that prior to last Saturday, and *after this paper had been written*, I knew nothing of Dr. Roe's (of Rochester) theory of hay fever, his method of treatment, and his results. The contribution I have just had the honor of presenting to you embodies precisely those views, and the results shown indicate evidently that the theory is the true one. Since I can not come in first, I am happy to come in a good second, for I feel that I have done something to strengthen in your minds the assertions set forth in Dr. Roe's excellent papers on the subject. Nothing can be stronger than unbiased, independent research and subsequent arrival at identical results. We were separated by hundreds of miles, unaware of each other's labors, and still the same point was attained, which gives us good reason to think that another affliction of humanity can be mastered. I feel happy at this coincidence, not only because I have given strength to Dr. Roe's views, but also because I feel very much stronger in mine; but I wish to call your attention to the fact that his first success was attained in 1879, while mine was only two years later. To Dr. Roe, then, belongs the honor of having first brought before the profession means for the radical cure of one of the most intractable diseases with which it has had to contend, and to the American Laryngological Association the merit of having been the *stimulus* that brought forth a paper which will only be what the first stone is to a monument.

DISCUSSION.

Dr. SHURLEY said: I have seen three cases, one of which was of the neuralgic form, and the other two true hay fever. In operating I had not followed exactly the practice laid down in Dr. Sajous's paper. Instead of singeing over the entire surface, I have simply cut just through the membrane, not very deeply, and finished up one side at a sitting. Previous to operating I have been in the habit of ascertaining with a little probe the limits of the hyperaesthesia. In one case I found it confined to the middle turbinate bone, and operated upon that alone. The last case operated upon I have not heard from since the operation. In another case the cure has remained perfect for eighteen months—up to the present time. The patient had suffered for years, and in other respects was healthy; there was no hereditary history of the disease.

Dr. ROE said: I am glad to find that the author's experience so fully coincides with my own. With regard to the permanent effect of the operation, in only one or two cases have I found any return of the trouble whatever. One patient was operated upon in 1879, with no return of the affection. One patient who underwent treatment about two years ago had a slight irritation in one nostril the following summer, but it was found to be due to lack of thoroughness of treatment, and I believe that where there is any return of the difficulty it will be found to be due to the fact that the entire sensitive area has not been treated. A means of determining whether or not

treatment has been effectual is the use of the probe, touching the surface with it—if any sensitive point remains, the patient will manifest it at once when touched. I have many times brought on marked attacks at once by touching the sensitive spots. In one case the attacks were brought on by touching the superior portion of the nasal septum on one side. The patient did not continue treatment until I felt satisfied that he was cured, and during the summer he had another attack. In the autumn and winter it was found that a sensitive point yet remained untouched.

With regard to the way in which asthma is brought about, I do not quite agree with the author that there is spasm of the bronchial tubes. I think it due to congestion of the mucous membrane. Irritation of the nerve produces engorgement of the pulmonary vessels, and asthma is thus produced. This theory is verified by the clinical features of the case. After an attack of asthma there is always a good deal of expectoration, and, as soon as the expectoration becomes free and the tubes are clear, the asthma subsides. If there was simple spasm of the bronchial tubes, we should not expect this free exudation.

As to the different exciting causes, some are due to engorgement and hypertrophy of the nasal membrane. In such cases we have to destroy the hypertrophic tissue, and if there are any exostoses of the turbinated bones, or of the septum, it is important to remove them in order that no occlusion may take place by swelling of the mucous membrane. It does not follow, however, that all persons with nasal stenosis have hay asthma. It would seem that there must be, back of this exciting cause, an idiosyncrasy affecting the terminal fibers of the nerve in the nose. It is sufficient simply to remove the irritability, and destroy the deeper plexus of vessels, so that no engorgement can take place, and, when we are sure that we have removed all irritability, we can also be sure that we have cured our patient. If any irritable area remains, we may be sure that our work has been incomplete.

Dr. MACKENZIE said: Reference has been made in the discussion to the well-known but imperfectly understood personal susceptibility or "idiosyncrasy"—a term which has been used to cover our ignorance concerning the pathology of the disease. I propose to substitute for the meaningless term idiosyncrasy that of abnormal excitability of the vaso-motor nerve-centers. While it is undoubtedly true that certain conditions of the nasal passages are necessary to the production of a paroxysm, I think it equally certain that in a number of cases such conditions are brought about by abnormal functional activity of the nerve-centers, and that, in our zeal as specialists, the importance of the latter as an aetiological factor should not be lost sight of. I think, therefore, the theory of organic change in the terminal fibers, as advanced by Dr. Roe, and that of nasal obstruction, as advocated by Dr. Allen, inadequate to account for the phenomena of the disease in question. The essential, distinguishing feature of so-called "hay fever" resides in an exalted condition of erethism of the nasal erectile tissue, and especially that portion occupying the posterior end of the inferior turbinate bone and the septum immediately opposite—an area which I believe to be especially concerned in the production of the nasal reflexes. This area corresponds, as I have shown, and as had been subsequently pointed out by M. Longet to the distribution of the two sphenopalatine nerves, as distinguished from the nasal branch of the ophthalmic, which latter supplies the anterior portions of the nasal fossæ. The former nerves are derived through the ganglion, and probably, therefore, contain the vaso-motor filaments that govern the erection of the turbinated tissue. Hence the discovery of the sensitive area in the posterior part of the nasal fossa becomes the key to the

mechanism of the paroxysm, and brings us nearer the solution of its pathology.

This exaggerated irritability of the cavernous tissue may be directly due to the constant presence of congestion or other pathological conditions of that structure, the result of direct (or reflex) stimulation from *ab extra* influences, plus an over-sensitive state of the nerve-centers begotten of their constant excitation by the irritation in the nose; or it may be brought about, in the first instance, by an exalted state of the central nervous system, leading eventually to disordered functional activity of the vaso-motor centers; or, finally, an over-sensitive condition of the latter may be conditioned by other pathological states of the system as a whole, or as the result of reflected irritation from its individual parts. As an example of the latter, I may refer to a case where the paroxysms were probably occasioned by disease of the ovaries. There is, practically, an infinity of causes, external and internal, which may precipitate the nasal orgasm, such as various forms of matter in the atmosphere (odoriferous particles of certain plants, germs, fruits, forms of animal life, etc.), or the same result may be brought about by causes commonly productive of erection of the nasal tissue, such as varying meteorological conditions, etc. I have provoked the paroxysm by irritation of the sensitive area with the probe. Whatever be the original cause of such special tendency to erection and evolution of reflex phenomena, the essential part of the mechanism of the paroxysm is the congestion and consequent orgasm of the nasal erectile area. In accordance with these views, the treatment should consist in the careful search for, and appropriate treatment of, any source of central or reflected irritation, the exclusion of local irritants, and the topical treatment of existing nasal disease. The latter will generally consist in *the destruction of that portion of the erectile area supplied by the sphenopalatine nerves.* By this latter procedure the essential part of the mechanism by which the paroxysms are produced is abolished, and the machinery which puts them in action stops.

I agree with Dr. Roe that the best method for destroying cavernous tissue consists in the skillful use of the galvanic cautery.

Dr. BEVERLEY ROBINSON said: I have had but comparatively little experience in the treatment of hay asthma, but I would ask the experience of those present in the use of carbolic acid. Last summer a lady came to me who said she had suffered from hay asthma for some years, and was then in the beginning of an attack. Happening to have some pure carbolic acid at hand, I covered a probe with it and passed it through the nose on both sides of the septum. Within a day or two she returned and said she had been greatly relieved. I made three or four more applications, and she has remained practically cured. Since that time I have had occasion several times to apply carbolic acid in the treatment of nasal catarrh, with excellent effects.

Dr. ROE said: I can not agree with Dr. Mackenzie regarding the pollen theory. I believe that hay fever is due to pollen. If they were not, why should the attack occur usually at a certain period of the year, the patient perhaps being able to tell the day and hour when it will come on, corresponding to the season when certain grasses and plants throw off their pollen. Many patients can tell the particular weed which affects them (commonly the ragweed), and by avoiding this can avoid the attack. I am therefore convinced that the pollen theory is correct.

Dr. JOHNSTON said: In my own case I never suffer from catarrhal troubles except in August, and usually on the 28th of that month I expect an attack of hay fever. I am less likely to suffer if I avoid the fields, the railroad cars, and dusty places. Last summer I went to Washington and had a severe attack; but

on reaching the mountains, three hundred feet above the sea, the attack at once disappeared; when I returned to Washington, the attack was renewed. I obtained relief by inhaling morphine, chloroform, or eucalyptus.

Dr. MACKENZIE, having understood Dr. Roe to say that all cases were due to the pollen, said that, while it was undoubtedly true that most attacks came on during certain months of the year, and many patients could predict with absolute certainty the day and even the hour of the attack, this was not universally the case by any means. There were patients who had hay fever in the winter, the attacks being just as severe as in the summer, and apparently due to a change in meteorological conditions. There were, in fact, innumerable different things which would precipitate an attack. He knew a patient who could bring on a paroxysm by stepping on the cold floor after rising from bed in the winter.

Dr. ROE remarked that persons might be exposed to pollen even during the winter.

The PRESIDENT said: I have seen at the dispensary a great many cases of this affection, which I think might better be called vaso-motor rhinitis, and in every case I believe three elements exist to bring about an attack—namely, a nervous or neurotic element, which has already been shown so conclusively to exist; a structural change in the nasal cavities; and a sensitiveness to the influence of some extraneous agent, as ragweed, etc. Now, remove any one of these three elements, and we prevent the attacks. This may be done by different means. For instance, I have a patient who went systematically to work to overcome the diathesis by hygienic means, and he completely cured his case by thus removing the neurotic tendencies. If a patient is sensitive only to the ragweed pollen, by avoiding that he will avoid the paroxysms. If the other element, the peculiar condition of the nasal membrane, is removed, this also will prevent the occurrence of the attacks.

Dr. SAJOURS, in closing the discussion, said: In speaking of the nasal condition, I did not mean to overlook the reflex center. It amounts to the same thing. The nose is the most exposed surface to irritation; but let the irritation exist in the knee, vagina, or rectum, the phenomena being reflected to the nose, and we have the paroxysm. In some persons, however, the nasal mucous membrane may not be so sensitive as some other portion of the body, as the vagina or rectum, and in such cases the point of origin of the reflex irritation will be in the more sensitive localities. I do not advocate the theory that pollen alone is the exciting cause, but rather a hyperæsthesia of the nose, which may take on irritation from different sources. In most cases, however, pollen will cause the exacerbation. I think Dr. Roe's method for determining the sensitive spot by the probe an excellent one.

ON THE DURATION OF CONTAGIOUSNESS AFTER ACUTE INFECTIOUS DISEASES.*

By ALFRED LUDLOW CARROLL, M. D., ETC.,
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UNDER most sanitary authorities a salutary regulation exists forbidding the return to school of any pupil convalescent from a contagious disease except upon a medical certificate that the danger of infection is past. And, aside from this very necessary precaution against the perpetuation and dissemination of infection in schools or through other public intercourse, our more private duties to our clients

* Read before the New York State Medical Association, November 18, 1884.

almost daily call on us to decide when it may be safe to permit the restoration to the family circle of some patient whom we have been carefully isolating in a separate chamber during the course of an acute infectious disorder. From many points of view, therefore, this inquiry is one of great practical importance to the public and to our profession; and yet, in the present state of our knowledge, it is one of the most difficult to answer. We know the limits of incubation of most of the infectious zymoses; we know something of the ætiology of many of them; we know much of their natural history, and we are unlearning much as regards their treatment. But in our narrow field of observation we know nothing of the wider and more momentous question. When do they cease to threaten others than the individual under our care? And in our preventive efforts we have for years gone on in blind empiricism, erring, perhaps—as it is the proper part of ignorance to do—on the side of over-cautiousness, but without any definite facts to guide us. Much time must elapse, and many accurate observations be made, before such facts can be established and fixed rules of conduct deduced from them; and my intention is, not to advance any new theories, but simply to present for consideration a subject which, in an assemblage such as this, may profitably serve as material for “collective investigation.”

In the consideration of this question we must theoretically exclude the retention of the several contagia by fomites. Without doubt, much perplexity has hitherto arisen from the undetermined part played by infected clothing resumed by the convalescent patient, or by other inanimate articles. For our present purpose we must assume that proper measures of disinfection have been pursued with regard to these, and that we have to deal solely with the body or excreta of the individual.

Another element of uncertainty lies in the “personal factor”—the varying susceptibility to infection of different persons, or of the same person at different times. Of a hundred unprotected persons exposed to the contagium of small-pox, or measles, or any other infectious zymosis, a considerable percentage will escape infection; but their immunity is, of course, no evidence that the transmissibility of the virus has ceased.

At the present day most of us, probably, are convinced that, in the majority, if not in all, of the communicable zymoses, certain forms of microphytes act, if not as the specific causes, at all events as the carriers of disease; and, from this point of view, our ultimate certitude as to the question at issue must come from further biological research into the life-history of the various pathogenic or pathophorous schizophytes and the latent vitality of their resting spores. But, in the mean time, our course must be shaped according to the best trained observations at our command.

The only attempt within my knowledge to formulate experience in respect of the duration of infectiousness is that of Dr. Miller, of Dundee,* whose tabulation is as follows:

Small-pox.....	14 days after termination of scabbing.
Typhus.....	28 days from inception.
Scarlet fever.....	7 weeks from inception.

Diphtheria.....	6 weeks from inception.
Whooping-cough.....	8 weeks from inception.
Measles.....	6 weeks from inception.

The first thing that strikes one about this table is the omission of any estimate of the duration of infectiveness in the discharges from diseases such as enteric fever or cholera; the second, the rather arbitrary assumption of intervals which in some instances may seem unnecessarily long.

In order to ascertain if there was any consensus of professional opinion regarding the points so often brought before me in my official position, I addressed, some months ago, a note of inquiry to several of the leading medical teachers and hospital physicians of this and other cities; whose names, for the present, I shall leave unmentioned, as their kind replies were intended to form the basis of a report to the State Board of Health. I may, however, briefly recapitulate the views presented in their valued communications.

SMALL-POX.—As to small-pox, there is practically unanimity in regarding the danger as existing until all crusts are removed; but a few incline to prolong even further the period of isolation. One of our most eminent teachers writes that “at least eight weeks should elapse . . . before a child that has been affected with it should be allowed to return to school.” On the other hand, a gentleman of wide sanitary experience apprehends but little danger from the crusts which sometimes linger under the thick skin of the soles and palms, provided that every scab is removed from the body and hair, and thorough cleansing of the surface effected. Other correspondents fix the duration of quarantine “during the whole of desquamation”; “until the cicatrices are fully healed”; “until all traces of the cutaneous affection have disappeared and everything is removed from the surface of the body by repeated ablutions”; and other replies are to the same effect; while one writer approves, in general terms, the rule of the Boston Board of Health, as regards all infectious disorders, that four weeks should elapse from the beginning of the last case of disease in the family before a patient should be allowed to attend school.

TYPHUS FEVER.—In relation to typhus, the responses are fewer and less in accord. One deems fomites the most important factor in the dissemination of the malady, while the rest lay stress on personal contagion. One regards it as “not contagious after a short interval”; a second advises segregation until repeated baths have followed the complete disappearance of the cutaneous exanthem; a third, somewhat indefinitely, would permit return to school “after complete recovery and disinfection.”

TYPHOID FEVER.—Those who believe in the direct personal contagiousness of enteric fever are few in number, and I fancy that nearly all of us will agree that the intestinal discharges are all with which preventive medicine has concern. Whether these retain their infectious properties during the whole process of the malady is a question still in uncertainty, and rendered more obscure by the apparent demonstration that the disorder may, under certain undetermined circumstances, be generated *de novo* from ordinary sources of filth-poisoning. At all events, isolation of the person seems unnecessary as soon as convalescence is complete.

* “British Medical Journal,” No. 1074, p. 173.

The same considerations will apply, I believe, to cholera, with the further remark that, if Koch's recent observations are correct, the germs of this disease appear to be short-lived than any other known species, being destroyed, not only by desiccation, but by the "scavenger-bacteria," which conquer them in the struggle for existence in the products of common decomposition.

DIPHTHERIA.—Diphtheria affords a wider debatable ground. To begin with, there are many (among whom my own experience forces me to class myself) who assign the first place in the pathogeny of diphtheria to filth-poisoning, and doubt its exceeding contagiousness. Of a number of persons exposed to the same pathogenic conditions, it is not surprising that several should succumb; but this is not convincing evidence of transmission from one to the other, and I have seen repeated instances where, despite intimate contact, the disease failed to extend after its introduction into places in proper sanitary condition.* Moreover, the experiments of Péter and Trousseau serve to show, at least, that diphtheria is not contagious under all circumstances. One of my correspondents, who has long had charge of a large hospital for children, believes this malady to be "feebly, if at all, contagious," and finds it quite safe to remit quarantine "after the disappearance of membranes"; a practical sanitarian, of national reputation, excluding fomites and filth in air or water, does not believe in personal contagion; a distinguished teacher in one of our metropolitan colleges doubts "its communicability, except by contact"; another, equally eminent, declares that contagiousness endures until the last trace of inflammation or infiltration secondary to the diphtheritic process has disappeared; a fourth would protract the duration of quarantine for a month, or, at least, three weeks, after all symptoms have abated, and would forbid return to school while any redness of the fauces or any coryza lingers. The discrepancy of opinions in this respect among the leaders of professional thought suffices to show the need of more definite data to guide our deliberations.

WHOOPING-COUGH.—In pertussis, all opinions agree, save one, that contagiousness ends when the cough loses its spasmodic character, the single doubtful view being that, as the danger is wholly from the breath of the patient, it can not be determined how long the cough may convey infection. It should be remembered, however, that a few writers have expressed doubts of the contagiousness of pertussis in any stage.

MEASLES.—With regard to measles I find equal diversity of views. One regards its contagium as very volatile, not long adhering to person or clothing, and permits the return of the patient to school in two weeks after convalescence; a second would defer liberation from quarantine until a week, at least, after desquamation; a third releases the patient when desquamation has ceased, or, in cases where no desquamation occurs, after twenty-one days; a fourth fixes eighteen days; a fifth believes the danger past when the febrile stage and eruption are gone. The majority measure

the time of isolation by the process of epidermal exfoliation.

SCARLATINA.—In scarlatina, also, we have opposing opinions, ranging from that which considers it as a pythogenic disease, slightly, if at all, contagious from the person, to that which holds the infection to be communicable by the pulmonary exhalations, the blood, the naso-pharyngeal secretions, even the urine, as well as by the epithelial scales. One of my correspondents thinks the infection remains so long attached to the person that quarantine should endure for eight weeks; another cites an example of transmission after six weeks of isolation followed by a change of clothing; the rest concur in releasing the patient after desquamation has ceased and the surface been thoroughly cleansed. Most of us, I dare say, have adopted this "rule of thumb." In my own practice, for some years, I had the patient frequently anointed with carbolized or thymolized vaseline, endeavored to maintain complete isolation until all desquamation was at an end, and then prescribed two or three thorough baths, including a careful washing of the hair and scalp. But on several occasions I found that the quarantine which I had ordained was considerably abbreviated by the parents or the patients themselves, and that children still furfuraceously desquamating after scarlatina or measles had indulged in social intercourse, or even returned to school, without conveying infection to their companions; and it occurred to me to wonder whether—granting that the exfoliated epithelial scales are the principal carriers of the contagion—all the successive crops of cast-off scales were acting as chariots for infective micro-organisms, or whether the later-arrived cells, as they rose from the deeper layer to become cornified in their turn and ejected, might not be quite free from taint. The same idea has evidently struck one of my most esteemed correspondents, who, speaking of quarantine during desquamation, adds that "forty days are sufficient," and that if, as sometimes happens, the scaling process seems to last much later, it is "no longer scarlatinal in character, but the result of dermatitis in general in a skin which has not regained its original health, without its being the seat of an infectious or contagious process."

I am quite aware that I ought to apologize for even this brief intrusion on your patience, when, instead of bringing any addition to your stock of knowledge, I come only to subtract from it, so to speak. But, forasmuch as "the promotion of public health" stands second on the list of objects of this association, I trust that I shall be pardoned for simply pointing out the uncertainty which exists in relation to one of the most needful means to promote public health, and for invoking your collective aid in elucidating the problem.

THE HYDROCHLORATE OF COCAINE IN GENITO-URINARY PROCEDURES.

By FESSENDEN N. OTIS, M. D.

My attention was first attracted to the probable value of the hydrochlorate of cocaine in genito-urinary troubles by my friend Professor C. R. Agnew, who gave me an early account of his gratifying success in operations on the eye

* *Vide* a paper by Dr. M. A. Avery, Assistant Physician to the Nursery and Child's Hospital, in the "N. Y. Medical Journal," February, 1882.

(subsequently published) and also kindly gave me sufficient of the two-per-cent. solution to try its effect on the mucous membrane of the urinary passages. Before a suitable case presented I received a note, November 6th, from Professor R. W. Pease, of Syracuse, giving me an account of his use in the urethra of a four-per-cent. solution in an operation for stricture an inch and a half back of the meatus on the day previous. "About twenty drops were used with a common dropper, stopping the progress of the solution backward by holding my finger on the urethra back of the stricture, and retaining it in the canal about eight minutes. The sensation was about nil. I ought to have retained it fifteen, and I think then the success would have been complete. . . . I have used the cocaine in a sensitive urethra, when catheterization was very painful, with charming results." He concludes: "I make no doubt in this new agent we have something that will entirely take the place of ether in all operations on the penile portion of the urethra." On the day following (November 7th), I dropped a few drops of the two-per-cent. solution received from Dr. Agnew into the first inch of a very sensitive urethra, holding it in ten minutes. I dilated the orifice from 27 mm. to 31 mm., preparatory to an operation for litholapaxy, which was to be done on the following day, and I did not wish to incise. The patient was very hyperæsthetic, but gave not the least evidence of pain during the operation. November 11th Dr. Coonley, of Staten Island, called with a patient suffering agony from frequent and difficult micturition. A stone in the bladder was suspected, but the doctor said it was impossible, and that intense pain was caused by the attempted introduction of instruments to get a satisfactory examination, and the patient was averse to the use of ether. He was obliged to urinate before anything was done, and it was at least five minutes, after passing a few drachms of urine, before the vesical tenesmus was fairly over. I then injected, with an ordinary penis-syringe, about fifteen drops of the solution given me by Dr. Agnew, and pressed it back into the urethra as far as possible. The patient retained it by pressure at the orifice for ten minutes. This was repeated, and at the end of the second ten minutes I introduced and passed a silver searcher (Thompson's) through the urethra (detecting a scale of calculous material *en route*) and into the bladder, without causing the least pain. I struck a stone in the bladder. I then took a large-sized Thompson's lithotrite and introduced it with some difficulty through the preputial orifice, which was not only contracted, but adherent to the orifice of the urethra. There were also two bands of stricture within the first inch of the canal, which impeded the progress of the lithotrite. By a little perseverance, however, I passed by these obstructions and carried the instrument into the bladder, grasped a stone of a diameter of one inch, and, while holding it, struck another stone, thus demonstrating the presence of at least two stones.

I then disengaged the lithotrite and withdrew it, tightly hugged in the anterior part of the canal. The patient stung, with great unction, that he felt not the slightest pain during the entire procedure. I then divided the preputial orifice freely, also the meatus and the strictures previously

mentioned, with a straight, blunt bistoury. Not the least flinching or sign of pain was observed, and the patient stated that he felt only a slight twinge when the second stricture was cut. This was fully ten minutes after the second introduction of the cocaine.

Delighted with the success in producing perfect local anæsthesia in this case, I immediately determined to use it in a case of hyperæsthetic urethra, associated with enlarged prostate, where, on account of the intolerance of the urethra to any sort of interference, the introduction of the catheter for emptying and washing of the bladder had been entirely suspended for several weeks. I had quite used up the solution given me by Dr. Agnew, and the leading drug-stores could not furnish it. I at last succeeded in getting half an ounce of a two-per-cent. solution. The patient (who was also a professional friend) was most anxious to have it tried, and was full of hope that this would enable him to have the necessary catheterization performed. The great dread of any interference made him insist that the solution should be introduced very slowly and gradually. It was fortunate that he did so, for, when not more than three or four drops were injected into the urethra, he became almost frantic with pain, and it was only after half an hour that the intense suffering caused by the injection passed entirely off. The action of this two-per-cent. solution, presumably of the same kind as that used in the previous case, made me fear that, as with other anæsthetics, there were idiosyncrasies in some persons that would contra-indicate its use. On making inquiry, I ascertained that there had been a number of cases met with where, a four-per-cent. solution of hydrochlorate of cocaine being used in the eye, a period of thirty or forty seconds of quite sharp irritation preceded the anæsthetic effect, and, also, that at least one case of sharp urethritis had been directly caused by its application to the urethra. On making close inquiry, I at last ascertained that the druggist from whom I obtained the solution, having none of the hydrochlorate on hand, *had dissolved the alkaloid in hydrochloric acid*, and had used this extemporaneous hydrochlorate for my solution.* Having soon the good fortune to obtain a small bottle of Merck's crystals of the hydrochlorate of cocaine, I made a two-per-cent. solution with distilled water, in which two per cent. of biborate of sodium had been dissolved, and on a second trial in the same case, where so much suffering was caused through the impurity of the solution, I succeeded in applying it to the urethra, as in the previous case, and in passing a catheter, drawing off the urine and washing out the bladder without the least pain. On Thursday last, November 20th, in my clinique at the College of Physicians and Surgeons, I introduced a similar solution into a very sensitive urethra associated with senile hypertrophy of the prostate. A preliminary attempt to pass a catheter caused manifest pain. After the retention of the four-per-cent. solution of hydrochlorate of cocaine for ten

* I subsequently tasted the cork of the phial containing the solution, and found that a sharp stinging sensation quickly followed, and continued to be felt for ten or fifteen minutes. On applying Merck's four-per-cent. solution of cocaine to my tongue, in the same way, only a slight furry feeling was produced, reminding me of a weak solution of aconite.

minutes in the urethra, the catheter was passed through the urethra, and subsequently the bladder was examined for stone, and not the least complaint of pain in the urethra was made.

On the 23d inst. I introduced a four-per-cent. solution into a fairly tolerant urethra to a depth of four inches, and retained it ten minutes. I then divided with my dilating urethrotome a dense stricture half an inch broad and five millimetres thick without the least shrinking on the part of the patient, who stated that he had only the feeling of distension, and not the slightest sense of pain during or subsequent to the operation. I have made several experiments since, and find that the best mode of introducing the cocaine solution for relief of irritable urethra, especially when associated with prostatic trouble, is to attach a tight-fitting half-ounce penis-syringe to an open-end rubber catheter of eighteen or twenty mm. in circumference. After pouring the solution into a small graduate, draw a sufficient quantity up into the catheter. Introduce it for a half-inch, or until the patient complains of pain, then press down the piston, gradually driving a few drops in advance of the catheter, rubbing it along with the finger, waiting for three or five minutes, then passing it down about two inches farther, and repeating the process of coaxing the fluid back until finally the end of the catheter enters the bladder, consuming altogether about fifteen minutes.

It will, I think, be proved that the greatest good will come from the use of the cocaine in the cases of irritability of the deep urethra associated with prostatic disease. In these cases the passage of a catheter, so essential to the comfort and even the life of the patient, is frequently rendered painful, and not rarely impossible, by spasm of the deep urethra. The use of cocaine promises quickly to reduce both the pain and the spasm, and allow of the easy passage of the instrument, and this, too, by a procedure quite within the province of an intelligent patient to use after proper instruction. A four-per-cent. solution of the hydrochlorate of cocaine in almond-oil makes an excellent lubricant for urethral instruments, and I think may prove even better than the watery solution for applications to the urethra. Its use in this way, in a few cases, has been very satisfactory.

The value of the solution of hydrochlorate of cocaine will be equally found in examinations of and operations upon the irritable anus and rectum. Yesterday I had occasion to examine a case of deep and irritable ulcer involving the tissues around the anus fully three inches in circumference to a depth of fully half an inch, and extending inward an inch or more beyond the margin of the external sphincter. The patient was an old woman of sixty, who had been worn to the last degree of irritability by nearly two months of suffering. After painting the surface of the ulcer with a four-per-cent. solution for ten minutes, I then introduced a bivalve speculum and exposed the whole inner surface, and cauterized it thoroughly, without the least expression of pain from the patient.

108 WEST THIRTY-FOURTH STREET, November 29, 1884.

THE SURGICAL MANAGEMENT OF RHACHITIC DEFORMITIES OF THE LOWER EXTREMITIES.

By V. P. GIBNEY, A. M., M. D.,
PROFESSOR OF ORTHOPÆDIC SURGERY IN THE NEW YORK POLYCLINIC.

(Concluded from page 609.)

A French writer on these deformities teaches that the best way is the quickest way, and a simple fracture can often be made in marked cases of deformity by manual force, while the treatment of the fracture is very simple. The plaster splint, as devised and so successfully used by Dr. Little, of this city, places these lesions of our own making under absolute control. Even the plaster-of-Paris bandage, when smoothly and neatly applied, serves to bring about perfect union. Other means of dressing will, of course, suggest themselves as one's taste inclines.

In correcting genu valgum, this manual force is often practiced, and is known as Delore's method, or *osteoclasie manuelle*. Epiphyseal fractures are produced frequently, ligaments are torn, and joints rendered very unsteady. Dr. Macewen concludes a survey of the method of *redressement forcé* by the following remarks:

"It may safely be concluded that *osteoclasie manuelle*, or *mécanique*, has served its time, and can not be practiced in the presence of the more exact methods of the present day."

From my own experience in redressing genu valgum in this way, and from the drift of sentiment, oral and written, I am well assured that Macewen's conclusion in 1880—the date of the publication of his work—will be warmly seconded at the close of 1884.

Among the more enthusiastic advocates of mechanical appliances for the gradual correction of these deformities, Dr. William J. Little, of London, stands at the head. The orthopædist, as a rule, is more or less committed to the employment of springs in these as well as in other deformities.

Certain cases demand apparatus, and this is sometimes an important point in diagnosis. Surgeons who have performed osteotomy very extensively agree upon that age when the bones yield to a moderate manual force as the age for the employment of springs. Dr. Poore, for instance, believes that, in a rickety child, yielding of the bones will be felt up to the fifth or sixth year. This author is not so much opposed to the use of splints as Dr. Macewen is. The latter, speaking of their use, says: "Good results, in isolated cases, are spoken of as having occurred; personally I have not seen any" ("Osteotomy," p. 93). In this city, at least, I am sure that the custom is to apply springs to children thus afflicted at any time between the second and eighth year.

The rule at the Forty-second Street Hospital is to reject cases in patients over three years of age. The rule, however, is honored more in the breach than in the observance. Clinically, five years seems to be the limit at this institution. My own rule is to employ springs, if I find the bones can be sprung with moderate manual force. We can test the bone in this manner with very little pain. I am refer-

ring now to bow-legs. If I find the femur curved, and the inner condyle unusually long in a case of knock-knee, I test with my hands the ligaments of the knee and the femoral curve, and am guided in my selection of cases for apparatus. The age beyond which I find this test failing is from four to five years. While an interne at the hospital, I had abundant opportunity of testing limbs, and the tracings on my records made from time to time in cases under treatment but confirm me in the adoption of this test for my guide. My friend, Dr. Poore, I find, is guided by the same test. At the out-door department of the hospital it is customary to refer to other hospitals, for osteotomy, children over four years of age, in whom these deformities are aggravated.

At the New York Orthopædic Dispensary very few cases are rejected, judging from Dr. Shaffer's very instructive paper on this subject published in "The American Journal of Obstetrics and Diseases of Women and Children" for July, 1881.

Dr. Little assigns no limit as regards age. He does what many of us do—viz., use splints first, and, these failing within a few months, resort to operation. His success, however, prompts him to undertake cases that many orthopædists in this country would relegate to the domain of operative surgery.

At this point a discussion as to the forms of apparatus employed, the advantages alleged for each, and the principles involved, will help to determine what cases can be corrected.

All the springs now in use are constructed, I believe, on one principle. This principle is force brought to bear against the convexity of the curve at its apex. One class of springs is intended to exert moderate but continuous pressure, while another class is intended to exert exaggerated pressure for a few seconds or minutes (Shaffer) in the direction opposed to the deformity.

If it is necessary to confine a patient to bed, an ordinary side-splint serves an admirable purpose; for with this a roller or rubber bandage, or straps and buckle, will exert as much pressure as can be tolerated. Dr. Little employs continuous pressure, and he represents the views of the larger proportion by far of the orthopædic surgeons. Dr. Shaffer represents the views of those who advocate the exaggerated momentary pressure.

About the simplest form of portable springs for continuous pressure are those in use at the Forty-second Street hospital. Concerning their efficiency I can speak quite positively.

The points of counter-pressure in a case of genu valgum are the trochanter and the outer ankle, and in a case of bow-legs the inner condyle of the femur, or the space immediately above this and the inner ankle. The ankle in each instance is protected by a steel foot-plate and heel-cup, which is worn within the shoe. The two vertical pieces are of bar steel without special polish, and are joined at the top by a semicircular band passing about the posterior surface of the thigh for knock-knees and the calf for bow-legs. At the lower end they are fastened by a rivet with a washer, making a free joint opposite the ankle. The apparatus is

held in position by straps continuous with this semicircular steel band and passing over the front of the limb, to fasten by a buckle or knob to the other end of the band. The foot is held in place by an instep-pad, the straps from which pass on either side through the space between the foot-plate and heel-band, to be brought over the outer side of the upright bars and tied on the pad already mentioned. At the upper end of the vertical bar for counter-pressure is a pad. Pressure is brought to bear now against the convexity of the curve by means of a broad band of canvas or leather, fastened to the outer vertical bar for knock-knees, to the inner for bow-legs, which band is brought now about the limb to lace in front. In other words, this band or belt passes, in the case of knock-knees, on the outer side of the outer bar and inner side of the inner bar, and *vice versa* for bow-legs.

These springs can be covered with material to suit one's taste, and finished to please the most fastidious. In ordering apparatus from any surgical-instrument maker, one should give a drawing and measurements, aiming to meet the therapeutic indications that the case presents.

Catalogues can be readily obtained from any of the prominent instrument-makers, and modifications of apparatus figured will always be made when ordered.

I have thus described one form of appliance, with the idea of giving the general underlying principle rather than of recommending any special make.

The splint employed at the New York Orthopædic Dispensary and Hospital is fully described by Dr. Shaffer in the paper to which I have already referred. Dr. Poore finds, by consulting published statistics, that the proportion of cures in genu valgum is not quite thirty per cent.

I very much regret that I have nothing statistical to contribute bearing upon the percentage of cures. To secure reliable data of this kind more time is required than I have at my disposal.

OSTEOCLASIS.—This operation has certainly not become popular in this country. Naturally one would prefer a simple fracture to a compound, and yet, for some reason, comparatively few surgeons resort to osteoclasis.

The perfection of French instruments has rendered the operation a popular one in France. Osteoclasts in this country do not give the results we are led to expect. Until we can have as complete an instrument as that of Robin, of Lyons, osteotomy will continue to be the operation for correction of femoral and tibial curves.

The various instruments are fully described in Dr. Poore's work, and need not be described in detail this evening.

OSTEOTOMY.—This operation has become applicable to nearly all rhachitic deformities of the extremities. There are very few surgeons but have become familiar with it, either for knock-knee or for bow-legs. The literature is abundant, and the instruments employed, as well as the mode of operating, are familiar to all. I certainly would not attempt to tell the fellows of this Academy how to operate when whole chapters in recent works discuss this point in the fullest of detail. It is with results that I shall deal, and, in speaking of those for the relief of genu valgum, I can do no better than ask you to note with me some statistics Dr. Macewen presented at the recent meeting of the

International Medical Congress held in Copenhagen. In eight hundred and twenty personal supra-condyloid osteotomies there were only eight cases in which suppurative took place, and in six of these the cause was attributed to extra force applied under accidental circumstances. He had only one relapse; had hæmorrhage in none. Five died, but in not one was the fatal result due to the operation. In five hundred and eighty additional cases collected from British surgeons he finds hæmorrhage in only two instances, supuration in forty, and relapse in five, while in two there was ankylosis, and three died as a result of the operation.

His personal operations were conducted under the spray and with strict Listerian precautions. For full details the "Lancet" for September 27th can be consulted. There is also an excellent abstract in the "Medical News" for November 1st. From this abstract I find that profuse, and even fatal, bleeding may attend this procedure.

Langton, in the "Lancet" for March 29, 1884, records a "death after amputation of the thigh on account of gangrene consequent upon ligation of the popliteal artery, which had been punctured by a sharp spicula of bone which projected from the lower fragment."

McGill, in the "Lancet" for May 17th of this year, records a case in which the popliteal artery was completely divided, the patient making a good recovery after ligation of both ends.

Howard Marsh ("British Medical Journal," April 5, 1884) wounded the anastomotica magna, but successfully secured it on the seventh day. A friend in this city tells me that he has divided this artery. In a case of my own I had most alarming hæmorrhage from the bone itself, and succeeded only in controlling it by packing a sponge covered with iodoform between the cut surfaces. This is the only case in which I have had any hæmorrhage that gave the least annoyance. The case in which I had the bone hæmorrhage was in an Italian girl, aged seven years and a half. I did the supra-condyloid operation on account of a marked symmetrical antero-lateral curvature of the femora, and, but for this annoying hæmorrhage, would have also done Shede's operation on the tibiae, inasmuch as sharp tibial nodes, or exostoses, existed on the anterior and inner aspects of these bones at the junction of the upper with the middle third. The result has been good, so far as the femoral curves are concerned, but there is still a well-marked genu valgum dependent on the tibial curves. A detailed account of my osteotomies would be premature, as I have only enjoyed this privilege during the present year.

In February I did a double cuneiform osteotomy, in private practice, in a case that I had had under mechanical treatment for twelve months. And let me here remark that I have never seen an anterior tibial curve corrected by apparatus. This is pre-eminently one of the rhachitic deformities that mechanical appliances will not, so far as my observation goes, make any impression upon. The result of the cuneiform osteotomy was good, and all appliances have long since been discarded. In only one instance have I had a hospital case to treat, and it is to my friends, Dr. Chauveau and Dr. Adam, that I am indebted for the courtesies of the French Hospital.

In March I operated on a nineteen-year-old lad for the relief of bow-legs, and the section through his tibiae was tedious in the extreme. The relief has been greater than was anticipated; for not only is the deformity entirely overcome, but his gait is far better than it ever was. [The accompanying sketches were made by Dr. Van Shaik on March 11th, the day of operation, and on August 18th, four months after removal of all support.]



It is interesting to note that I have done nine linear osteotomies and two cuneiform osteotomies, during the past six months, at the Polyclinic, and sent the patients home as soon as the plaster dressing had become hard enough. In none was there any temperature above 102° F.

In a supra-condyloid osteotomy I have had a unique accident, so far as I can learn. The accident was a paralysis of the external peroneal nerve, first appearing at the end of the third week. The operation was done on August 7th, and on September 2d, having seen the case several times in the interval, I fancied that there was a slight paralysis of the anterior tibial group of muscles. A more careful examination was instituted on September 4th, and it required a very strong faradaic current to get any response in this group. On the 17th Dr. Starr tested the case electrically, and found faradaic contractility absent in the anterior tibial group, very much diminished in the peroneals and posterior tibial. In the anterior tibial group he found with galvanism the reaction of degeneration. The whole leg, and indeed the thigh, seemed powerless. Under electrical treatment, and apparatus to retain the foot in normal position, the limb has been restored. November 8th the cure was nearly complete.

In view of the invasion of the paralysis after three weeks had elapsed, and its disappearance two months later, I can see no other explanation than the injury to the nerve by the occurrence of callus.

The lessons I have learned from my own operations are:

1. Exaggerate the correction of deformity.
2. Examine the limb at the end of a week to ascertain whether the amount of correction gained is the amount desired.
3. Do not hesitate to refracture by manual force if it is necessary.
4. With strict attention to details in operating, and in the use of good plaster-of-Paris bandages well applied, cases

can be treated in a dispensary nearly as well as in a hospital.

5. In dispensary cases do all the operating you propose doing at one sitting.

I am still convinced that one loses nothing by following Lister as closely as it is possible to follow. If cleanliness in all particulars is Listerism, then be cleanly in every particular. I am satisfied that the best results are obtained in this way, and I propose to leave no stone unturned to secure the best possible results. Three months' support, in some form of splint, subsequent to the operation, is not too long.

The paper of Macewen at the International Congress compelled all men to admit that the supra-condyloid operation was *par excellence* the operation for genu valgum.

I have made no reference to the instruments employed, for the reason that the osteotome either of Macewen or Poore is the only one used.

As I am completing this paper, my friend, Dr. Shrady, permits me to inspect his new saw, and it seems that it is all that could be desired in a saw. The chisel or osteotome has taken the place of the saw, because no bone-dust is left to interfere with the healing of the bone.

If I have not given credit to the work of surgeons in this city, it is because I expect them here this evening to speak for themselves.

Book Notices.

Lectures on the Principles and Practice of Medicine. Delivered in Chicago Medical College, Medical Department of the Northwestern University. By NATHAN SMITH DAVIS, A. M., M. D., LL. D., Dean of the Faculty, and Professor of the Principles and Practice of Medicine and Clinical Medicine, in Chicago Medical College; Senior Physician to the Mercy Hospital, Chicago, etc. Chicago: Jansen, McClurg & Co., 1884. Pp. x-896.

We do not need the author's assurance that he has been for many years a practical teacher of medicine, for even a cursory glance at the work will assure the reader that it is the product of years of thought and experience. Treatises on the subject are by no means few in number, but there will never be so many that we can not heartily welcome another book like this. It would seem almost impossible to write anything new and interesting upon such a well-worn subject as the practice of medicine, yet Dr. Davis has displayed great originality, both in the arrangement and in the subject-matter of his work.

We can not enter upon a detailed notice of its many excellent points, or state at length wherein it differs from other works of the same class. But we would not have it understood that our praise is entirely unqualified. The author is a practitioner "of the old school," and, while he keeps abreast of the latest theories, he still clings to some of the ancient methods of classification. It seems rather odd at the present time to read about "susceptibility," "vital affinity," and "fluxes," but let us not judge from the writer's retention of these old terms that he is not conversant with the newest fashions of phraseology—far from it.

To describe the book briefly, we may say that it consists of

two parts; the first part, which includes about forty pages, treating of health and disease, "general processes and complex functions," medicines, and diagnosis. This is by far the least pleasing part of the volume, and, if the truth were told, it is to be feared that the students who listened to these introductory lectures must often have been somewhat puzzled in their attempts to catch the speaker's meaning. But, when the author enters upon the discussion of individual diseases and their treatment, we feel that he is more at ease. His classification is rather different from that adopted in most text-books. Beginning Part II with "General Diseases," he treats first of fevers, and then of scrofula, leucocythæmia, carcinoma and syphilis, rheumatism, and gout.

Typhoid fever is discussed exhaustively, no fewer than five long lectures being devoted to it; we can not say as much for intermittent fever, which is dismissed with barely two pages. Lectures XXXIII to XCII, inclusive, cover the subject of "Local Diseases," under which are included, first, affections of the brain and spinal cord, then pulmonary and cardiac diseases, morbid conditions of the abdominal organs, and, lastly, a class which the author calls "neuroses." Under the last-mentioned head he treats of apoplexy, hemiplegia (as if the two were separate affections), epilepsy, chorea, and functional nervous diseases.

After two lectures devoted to "Mental Derangements," Dr. Davis discusses what he calls "Miscellaneous Diseases," under which are included spasmodic asthma, angina pectoris, exophthalmic goitre, fatty heart, diabetes, and verminous diseases—a miscellany in every sense of the word! The book concludes with a vigorous lecture on alcohol as a therapeutic agent, in which the writer decidedly opposes the estimate generally held of the drug in that capacity.

In looking over the volume, we are struck with the fact that it is not evenly written; but this must be regarded as in some degree unavoidable when we remember that it is simply a series of extemporaneous lectures. Dr. Davis's strength lies not so much in his statements of theories as in his descriptions of disease and its treatment; although he is thoroughly informed in modern pathology, he is not a pathologist, but a practical physician. The value of his book to practitioners will lie in its clear style, its forcible presentation of important facts, and the admirable judgment displayed in the matter of treatment.

BOOKS AND PAMPHLETS RECEIVED.

Lehrbuch der Physiologie für akademische Vorlesungen und zum Selbststudium. Begründet von Rud. Wagner, fortgeführt von Otto Funke, neu herausgegeben von Dr. A. Gruenhagen, Professor der medicin. Physik an der Universität zu Königsberg i-Pr. Siebente, neu bearbeitete Auflage, mit etwa zweihundertundfünfzig in den Text eingedruckten Holzschnitten. Dritte Lieferung. Hamburg und Leipzig: Leopold Voss, 1884. Pp. 321 to 480, inclusive.

Transactions of the Academy of Medicine in Ireland. Vol. II. Edited by William Thomson, M. A., F. R. C. S., General Secretary, Surgeon to the Richmond Hospital, Dublin. Dublin: Fannin & Co., 1884. Pp. xxv-504.

Ciencia y Arte de los Partos. Por el Doctor Guillermo Thompson Lusk, Profesor de Obstetricia y Enfermedades de las Mujeres y de los Niños en el Hospital de Buenavista de Nueva York, etc. Traducida de la Segunda Edición Norte Americana por Federico Toledo, Licenciado en Medicina y Cirugía, Madrid. Nueva York: D. Appleton y Ca., 1884. Pp. 801.

Jewish Hygiene and Diet; the Talmud and Various Jewish Writings heretofore untranslated. By Carl H. von Klein, M. D. [Reprint from the "Journal of the American Medical Association."]

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.

Published by
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Edited by
FRANK P. FOSTER, M. D.

NEW YORK, SATURDAY, DECEMBER 6, 1884.

THE NEW LOCAL ANÆSTHETIC.

FOR several weeks past the medical press, including this journal, has teemed with testimony to the wonderful anæsthetic effects of the hydrochlorate of cocaine. Under ordinary circumstances, we should have waited for as many months to elapse before formally granting the truth of such allegations as are commonly put forth in behalf of any new remedy. But, although the available supply of the salt has thus far continued to be exceedingly limited, but a very small quantity has been needed to establish its marvelous power, and that little has been used to good purpose. We have no longer any hesitation, therefore, in proclaiming the announcement of the anæsthetic power of cocaine to be the most important that has been made in therapeutics since Morton astonished the world with his demonstration of the power of ether—the first and still the best of general anæsthetics.

Until within the past few weeks, coca had been known and used chiefly—almost exclusively—as a stimulant, and it is therefore not a little remarkable that its alkaloid should suddenly have made a brilliant reputation as a nullifier, for the time being, of the function of sentient nerves. On the other hand, as Dr. Squibb pointedly remarks, in his admirable article on the subject, in the November number of the "Ephemeris," it is almost as unaccountable that the full anæsthetic power of the drug was not brought to light before, seeing that its dilating effect on the pupil was well known, and that it was even in use to some extent by the laryngologists to benumb the throat so that it would admit of readier manipulation. But this latter consideration should not detract in the least from the credit to be given the medical student, Koller, for his discovery.

Even if it had turned out to be the case, as was at first supposed, that the anæsthetic effect was limited to the tissues that had actually imbibed the solution—and therefore to such small areas that the anæsthesia would scarcely have been available outside of ophthalmic practice—the great advantage of the agent would have remained unquestioned. That the range of its application would have been thus hampered is not disproved, practically speaking, by even so startling a fact as that laparotomy has been performed with no other anæsthesia than that produced by it, for we take it that the performance of abdominal section under local anæsthesia is at best but a curiosity, and not at all likely to become a settled practice. What is possible is not always the most desirable, and it seems to us extremely doubtful if surgeons will be willing to dispense with general anæsthesia as a rule in major operations. Leaving these out of account, however, there is a wide range of operative procedures in which it is necessary to have a considerable area anæsthe-

tized, but in which there is no need of abolishing the patient's consciousness. These cases could not well have been met by a local anæsthetic acting merely by imbibition, and it is for that reason that the newly discovered fact that the parts supplied by a sensory nerve may be made insensitive by an injection of cocaine in the immediate neighborhood of the trunk of that nerve is of an importance that can not be overestimated. That discovery seems to have been well established by the experiments performed by Dr. Halsted and Dr. Hall, recounted in the latter gentleman's letter, which we publish in another column; and we must not omit to credit Dr. Burke, of South Norwalk, Conn., with having practically hit upon the same idea, as may be gathered from his letter which we published last week.

No doubt much yet remains to be done in the way of experiment and observation before the precise sphere of the new anæsthetic can be defined, and it would be prudent for those who may undertake to furnish us with these data not to count too much upon the innocuousness of the drug, for it should be noted that Dr. Hall experienced marked constitutional symptoms from an injection of thirty-two minims of a four-per-cent. solution of the hydrochlorate. While caution is to be observed, therefore, the teachings of even our present limited experience with cocaine ought to go far toward silencing the senseless babble so often indulged in about the uselessness of experimenting with the comparatively unknown substances of the vegetable *materia medica*. Here was an alkaloid supposed to be well-nigh worthless, but it has suddenly been raised to the first rank. Who can doubt that our knowledge of its power would have been considerably delayed but for the work of the pharmacists? Had the Darmstadt laboratory remained, even up to the present time, the sole available source of its supply, much of what has already been accomplished with cocaine would unquestionably have been blocked by the sheer impossibility of obtaining the drug. We have all along been loath to believe that American chemists were unable to produce it, and we are gratified to be able to note that the potent product with which Dr. Halsted and Dr. Hall conducted their experiments was made by Messrs. Parke, Davis & Co. This aspect of the matter is not without its economic bearings, for we learn from Dr. Squibb's article that one of the chief obstacles to the production of the drug on a large scale in this country is the enormous tax which the Government sees fit to levy on alcohol and ether, those substances being the chief solvents used in the separation of the alkaloid.

MINOR PARAGRAPHS.

KOCH'S REPLY TO HIS OPPONENTS.

THE "Deutsche Medizinal-Zeitung" publishes a long letter by Koch, in which he replies to the objections urged against the specific character of the comma bacillus, and discusses chiefly the counter-experiments by Lewis and Finkler and Prior. We have not space to quote the letter at length, but would refer the reader to the original. The main point urged is, that all the gentlemen who have questioned the writer's results have not shown sufficient care in the conduct of their own experiments. He sees no reason as yet to lose faith in the importance of his discovery. One statement which he makes is of great weight

—that Rietsch and Nicati's experiments regarding the artificial production of cholera in the lower animals have been repeated with success in his own laboratory.

NEWS ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending December 2, 1884:

DISEASES.	Week ending Nov. 25.		Week ending Dec. 2.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid Fever.....	42	13	45	12
Scarlet Fever.....	61	15	50	12
Cerebro-spinal meningitis.....	1	1	9	9
Measles.....	127	21	111	20
Diphtheria.....	73	25	59	33
Yellow Fever.....	1	1	0	0

The Health Department of the City of New York, having lately been induced by the Grand Jury to modify the conservative view it had taken for some time past of the storage of vast accumulations of stable manure in the city, has adopted the following resolution: "*Resolved*, That the Sanitary Superintendent be and is hereby directed to cause an inspection to be made daily of all places where manure has been dumped, and to report whether the regulations in respect to dumping and storing of stable manure and straw in this city are complied with; also whether due progress is made in the removal of all accumulations of stable manure and straw by the owners of the same."

A Sanitary Convention, under the auspices of the State Board of Health of Michigan, was held at East Saginaw on Tuesday and Wednesday, the 2d and 3d inst. A number of papers of a popular character were read, among which we note the following: "Typhoid Fever and Low Water in Wells," by Dr. Henry B. Baker, the Secretary of the State Board; "Disposal of Waste Matter," by Dr. J. H. Kellogg, of Battle Creek; "Adulterations found in Common Foods," by Dr. V. C. Vaughan, of Ann Arbor; "Sewerage and Drainage in Relation to Public Health," by Dr. Henry F. Lyster, of Detroit; and "The Water Supply of East Saginaw," by the Hon. W. L. Weber, Dr. C. H. Eames, and Dr. R. C. Kedzie.

The Health of the State of New York.—The "Monthly Bulletin of the New York State Board of Health," for October, 1884, shows a reported mortality for the month of 5,871, being the smallest since June. The percentage of infant mortality was 41.0, of that from acute respiratory diseases 10.8, from consumption 15.4, from diarrhoeal diseases 11.1, from croup and diphtheria 7.1, from typhoid fever 3.0, and from all other zymotic diseases 5.2.

The Endemic in Virginia and Kentucky.—Concerning the outbreak of disease among the inhabitants of certain mountain counties adjoining the boundary between the States of Virginia and Kentucky, a correspondent writes us that his understanding of the situation is as follows: "The long drought, which began the 1st of August and has continued up to this time, dried up the springs and wells, also some of the creeks and rivers. On account of the great scarcity of water, many families were compelled to obtain their scanty supplies from stagnant pools in the exposed beds of creeks and rivers, and from hitherto unused mineral springs, the bitter purgative waters of which irritated the stomach and bowels, and produced diarrhoea, bloody flux, and in many instances death. Add to this impure water-supply insufficient food, and you have, no doubt, the prime fac-

tors of the outbreak. In proof that bad water has been the chief cause of the sickness, I give the current fact that, after a sufficient rainfall to raise the water in springs and wells, there followed immediately fewer cases of the disease and milder symptoms."

A Brooklyn Gynaecological Sanitarium.—We learn that Dr. Skene and Dr. Thallon have removed their sanitarium to a new building in President Street, Prospect Park Heights, a situation that seems to combine attractive surroundings with manifest sanitary advantages.

Sanitary Work in Naples, it is reported, is to be carried on vigorously, the Italian Government having appropriated nearly \$20,000,000 for the purpose.

The International Medical Congress of 1887.—The following-named gentlemen have been chosen officers of the congress: Dr. Austin Flint, Sr., of New York, President; Dr. Alfred Stillé, of Philadelphia, Dr. Henry I. Bowditch, of Boston, and Dr. R. P. Howard, of Montreal, Canada, Vice-Presidents; Dr. John S. Billings, of the army, Secretary-General; Dr. J. M. Browne, of the navy, Treasurer; and Dr. I. Minis Hays, of Philadelphia, Dr. A. Jacobi, of New York, Dr. Christopher Johnston, of Baltimore, and Dr. S. C. Busey, of Washington, members of the Executive Committee (besides the President, the Secretary-General, and the Treasurer). We are indebted to the Secretary-General for a copy of a circular giving further information, which we shall lay before our readers hereafter.

The New York Polyclinic.—Dr. W. B. DeGarmo has been appointed assistant to the chair of orthopaedic surgery. During the present session he will occupy the hour from 3 to 4 P. M., every Wednesday, in demonstrating the methods of making and applying the various apparatuses for the relief of hernia.

An Aspiring Midwife, plying her trade in Paris, advertises herself, according to the "*Progrès médical*," by distributing a handbill which reads as follows: "Plus d'héritiers antipathiques. *Experientia magister artium*. Guérison infaillible de la stérilité par la fécondation artificielle. Procréation des sexes à volonté. Prix accessible à toutes les bourses. Sage-femme, diplôme supérieur. Consultations tous les jours de midi à 2 heures."

The late Professor Pacini's Manuscripts, we learn from the "*Gazzetta degli Ospitali*," have been purchased by the Italian Minister of Public Instruction, and his unpublished memoirs on the cholera are to be edited by Dr. A. Bianchi.

A Caution.—Gentlemen who think of subscribing to this journal are cautioned against having any dealings with one P. M. Courtenay, who has lately been conducting his operations in Maine and New Hampshire.

The Death of Dr. William H. King, formerly of Providence, R. I., took place on the 16th inst., in California, whither Dr. King went about five years ago, on account of the state of his health. He was a graduate of the Bellevue Hospital Medical College, and practiced in Providence about five years, during which time he occupied several official positions.

A Statue of Sir Erasmus Wilson, in bronze, says the "*Medical Times and Gazette*," is to be erected outside the Margate Infirmary. It will represent him clad in his robes of office as president of the Royal College of Surgeons.

M. Pasteur, says the "*Lancet*," is reported to be about to proceed to Rio Janeiro in order to study the yellow fever.

Hydrophobia, according to a press dispatch, is prevailing in Vienna at the present time.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from November 23, 1884, to November 29, 1884:*

LORING, L. G., Captain and Assistant Surgeon. Assigned to duty as Post Surgeon, San Diego Barracks, San Diego, Cal. S. O. 135, Department of California, November 19, 1884.

WILSON, GEORGE F., First Lieutenant and Assistant Surgeon. Granted one month's leave of absence, from November 20th. (Vancouver Barracks, Wyoming Territory.) S. O. 180, Department of the Columbia, November 18, 1884.

WALES, PHILIP G., First Lieutenant and Assistant Surgeon. Now at Fort Cœur d'Alène, Idaho Territory, ordered for temporary duty at Vancouver Barracks, Wyoming Territory. S. O. 179, Department of the Columbia, November 17, 1884.

Society Meetings for the Coming Week:

MONDAY, December 8th: New York Ophthalmological Society (private); New York Medico-Historical Society (private); Boston Society for Medical Improvement; Gynecological Society of Boston; Burlington, Vt., Medical and Surgical Club.

TUESDAY, December 9th: New York Medical Union (private); New York Surgical Society; Newark, N. J., Medical Association (private); Trenton, N. J., Medical Association (private); Medical Societies of the Counties of Morris, N. J., and Penobscot, Me.

WEDNESDAY, December 10th: New York Pathological Society; American Microscopical Society of the City of New York; Medico-Legal Society, New York (election); Medical Societies of the Counties of Cayuga, Chemung, Cortlandt, and Montgomery, N. Y., and Middlesex, N. J.; Pittsfield, Mass., Medical Association (private); Strafford District, N. H., Medical Society.

THURSDAY, December 11th: Harlem Medical Association of the City of New York; New York Laryngological Society (private); Society of Medical Jurisprudence and State Medicine, New York (election); Brooklyn Pathological Society; South Boston, Mass., Medical Club (private); Medical Society of the County of Addison, Vt.

FRIDAY, December 12th: Yorkville Medical Association, New York (private); Medical Society of the Town of Saugerties.

SATURDAY, December 13th: New York Medical and Surgical Society (private).

Letters to the Editor.

HYDROCHLORATE OF COCAINE.

17 EAST FORTY-NINTH STREET, November 26, 1884.

To the Editor of the New York Medical Journal:

SIR: Wishing to use the hydrochlorate of cocaine in some small operations at the Roosevelt Hospital Out-door Department, I made some experiments on myself, to determine the best mode of using it. The preparation was a four-per-cent. solution made by Parke, Davis & Co. Injecting subcutaneously six minims on the dorsal surface of the forearm, at the junction of the middle and upper thirds, near the ulnar border, caused complete loss of sensation over an area extending downward as far as the lower end of the ulna, from three quarters of an inch to an inch wide above, and half an inch wide below, obviously following the distribution of a cutaneous branch of the ulnar nerve. There was no diminution of sensibility above the point at which the needle was introduced. A number of subsequent

experiments showed that the anæsthesia extended over the region supplied by the cutaneous nerves near or into which the injection was made. Thus, in a number of experiments made by Dr. Halsted and myself, we have found that, injected subcutaneously into the leg or forearm, not in the neighborhood of any large nerve-trunk, it will cause anæsthesia for a distance of two or three inches below the point of injection. An injection into the musculo-cutaneous nerve of the leg, at the point where it pierces the deep fascia, caused anæsthesia over all that portion of the leg and foot supplied by this nerve. An injection of eight minims into my left ulnar nerve at the elbow had no effect. An injection of thirty-two minims into the right ulnar nerve at the elbow caused, in two or three minutes, numbness and tingling down the forearm and little finger, and in five or six minutes anæsthesia extending down the ulnar border of the forearm and hand and over the little finger, with much reduction of the sensibility on the ulnar border of the ring-finger. There was an anæsthetic area over the olecranon and the posterior surface of the external condyle, which we should not expect to be supplied by the ulnar nerve. There was no apparent diminution of muscular power, and no anæsthesia of the skin at the point where the injection was given. We have noticed that, when the needle is thrust into the deeper layers of the subcutaneous connective tissue, there is usually no loss of sensibility at the point where the needle was introduced.

With the anæsthesia, marked constitutional symptoms appeared; about six minutes after the injection there was giddiness, at first slight, then well marked, so that I could not walk without staggering; and finally there was quite severe nausea, which would have been much worse, I think, had not the stomach been empty. At the same time, the skin was covered with cold perspiration, and the pupils were dilated. The nausea passed off, with the local anæsthesia, in about twenty minutes, leaving some dizziness for an hour or so longer.

The same evening Dr. Halsted removed a small congenital cystic tumor, situated directly over the outer third of the left supra-orbital ridge, and believed to be a meningocele, the communication of which with the cranial cavity had become shut off. Nineteen minims of the four-per-cent. solution were given hypodermically in divided doses, one external to the tumor, and the others close to the supra-orbital notch. In about five minutes the anæsthesia was complete. The incision through the skin and the earlier steps of the operation were not felt at all, but, in consequence of the close adhesions of the sac and its extensive prolongations, especially into the upper lid, the operation was somewhat protracted, and the anæsthesia had passed off to a considerable extent before it was completed. I was informed of a case, occurring on the same day, in which cocaine was injected, preparatory to performing a small plastic operation, in the same region, but no anæsthesia of the field of operation was produced. On inquiry, I was told that the injections had been given *above* the point where the incisions were to be made.

This afternoon, having occasion to have the left first upper incisor tooth filled, and finding that the dentine was extremely sensitive, I induced Dr. Nash, of No. 31 West Thirty-first Street, to try the effects of cocaine. The needle was passed through the mucous membrane of the mouth to a point as close as possible to the infra-orbital foramen, and eight minims were injected. In two minutes there was complete anæsthesia of the left half of the upper lip and of the cheek somewhat beyond the angle of the mouth (as I was in the dentist's chair, I could not determine the exact limits), involving both the cutaneous and the mucous surfaces; also of the left side of the lower border of the septum nasi and of the anterior surface and lower border of the gums, extending from the median line to the first molar tooth. Forcing the teeth apart with a wedge caused no pain except

when the wedge impinged on the unaffected mucous membrane of the posterior surface of the gums. Dr. Nash was then able to scrape out the cavity in the tooth, which had previously been so exquisitely sensitive, and to fill it, without my experiencing any sensation whatever. The anesthesia was complete until twenty-six minutes after the injection, and sensibility was much diminished for ten or fifteen minutes longer. Piercing the mucous membrane with the needle caused pain like the prick of a pin, but its subsequent introduction until it struck the bone and the injection of the solution were not felt. In the same way, the introduction of the needle into the ulnar nerve caused quite severe pain, with tingling down to the little finger, but the injection of the fluid gave rise to no sensation. In the experiment on the teeth, it surprised me that the incisor tooth should be rendered insensitive, as the anterior-superior dental nerve is given off in the infra-orbital canal. I can only suppose that the effect extends some distance along the nerve centrally, or that the fluid traveled along the sheath of the nerve into the canal.

We have already used this mode of administration successfully in a number of cases in the Roosevelt Hospital Out-door Department, and it is obvious that, when the limits of safety have been determined, it may find very wide application. For instance, in addition to the usual application to the conjunctiva, in operations on the eye, an injection into the orbit, in the neighborhood of the ciliary nerves, would doubtless diminish the liability to a very grave accident, which, I understand, has already occurred several times in the city—namely, the extrusion of the lens, from blepharospasm, occurring during iridectomy performed with the aid of cocaine. We have injected twenty minims a number of times, without causing any constitutional symptoms.

Very truly yours,

R. J. HALL, M. D.

Postscript, December 1st.—Since the foregoing was written we have made some additional experiments which seem of interest. Dr. Halsted gave Mr. Locke, a medical student, an injection of nine minims, trying to reach with the point of the needle the inferior dental nerve where it enters the dental canal. In from four to six minutes there was complete anesthesia of the tongue, on the side where the injection had been given, extending to the median line and backward to the base as far as could be reached with a pointed instrument. There was, further, complete anesthesia of the gums, anteriorly and posteriorly, to the median line, and all the teeth on that side were insensitive to blows. The soft palate and the uvula, on the same side, were anæmic and quite insensitive. Mr. Locke thought also that there was some diminution of sensibility in the domain of the auriculo-temporal nerve.

In four or five other cases where the injection was made in the same way, from fifteen to twenty minims being used, the fluid seemed to have come nearer the lingual than the inferior dental. In all, the tongue was affected sooner than the gums; the anesthesia extended as far back as the epiglottis, and the sense of taste was abolished on the affected side; and the posterior surface of the gums was earlier and more completely anesthetized than the anterior.

This evening Dr. Halsted gave me an injection of seventeen minims, the needle being introduced along the internal surface of the left ramus until it touched the inferior dental nerve, causing a sharp twinge along the whole line of the lower teeth. In three minutes there was numbness and tingling of the skin, extending from the angle of the mouth to the median line, and also of the left border of the tongue. In six minutes there was complete anesthesia of the left half of the lower lip, on both the cutaneous and the mucous surfaces, extending from the median line to the angle of the mouth and downward to the inferior

border of the jaw. A pin thrust completely through the lip caused no sensation whatever. There was also complete anesthesia of the posterior surface of the gums and of the lower teeth on the left side, exactly to the median line; hard blows upon the teeth with the back of a knife caused no sensation. The anterior surface of the gums was anæsthetic only from the median line to the first bicuspid. There was a small area of complete anesthesia, about the middle third of the left border of the tongue, not more than an inch in diameter. A slight return of sensation began twenty-five minutes after the injection, and five minutes later no complete anesthesia remained anywhere. I should mention that fifteen to twenty minims in this region caused, in two or three cases, slight constitutional symptoms similar to those previously described.

HYPODERMIC INJECTIONS OF PHENIC ACID IN MALARIAL FEVER.

46 WEST THIRTY-SECOND STREET, November 12, 1884.

To the Editor of the New York Medical Journal:

SIR: Under "Therapeutical Notes," in your last issue (November 8th), you report from "Union médicale" one case of intermittent fever successfully treated by hypodermic injections of phenic acid—1 to 100. Will you allow me to bring to your notice, and that of the readers of your valuable journal, that this method of treatment is by no means new in this country? Ever since 1871 I have cured by that system hundreds of cases where both quinine and arsenic had failed.

I do not claim to be the only one who employs the treatment here. I know that, since 1876 or 1877, Dr. Glover C. Arnold, to whom I then communicated my results with the phenic acid, has from that time given it the preference over all other febrifuges in intermittent fever. No less enthusiastic is Dr. Charles F. Roberts, who, but a few days ago, was telling me of his unvarying success in like cases.

It has been said by some that the injection is liable to cause abscesses. All I can say is, that I never had any, and I doubt the liability if a pure article is made use of. I always use a solution of phenic acid—freed from cresylic acid, rosolic acid, and rosanilin—which has been deoxidized and combined in its nascent state. Furthermore, I will state that I use a two-per-cent. solution, injecting one hundred drops at a time. Within a few weeks, sometimes in less than a week, I obtain a normal temperature, and, what is more, it remains such.

Very respectfully,

GIBBLANT DURANT, M. D.

Proceedings of Societies.

NEW YORK ACADEMY OF MEDICINE.

Meeting of November 20, 1884.

The President, FORDYCE BARKER, M. D., LL. D., in the chair.

A New Syringe for washing out the bladder, abscess-cavities, etc., was shown by Dr. ALFRED C. POST. It was made by the Messrs. Tiemann & Co., of hard rubber, and admitted of ready inspection of the piston from either end.

The President introduced Dr. Wile, of Connecticut, and Dr. Price, of San Francisco, and invited them to seats on the platform.

The Surgical Management of Rhachitic Deformities of the Lower Extremities was the title of the paper of the evening, read by Dr. V. P. GIBNEY. [See pages 606 and 637.]

Dr. J. D. BRYANT agreed with Dr. Gibney that many cases, in children, might safely be left to nature, but it was a question whether that was true of bow-legs. Doubtless, much was to be gained by hygienic treatment. As a rule, if he found the bones springy, he made two or three attempts a week at correction by forcible pressure on the convex side of the limb, and he thought, with Dr. Gibney, that any case in which correction could be thus accomplished was a suitable one for treatment by apparatus. He was inclined to favor a spring to make moderate pressure against the point of greatest convexity. It was his impression that osteoclasia had been but little used in New York, and certainly, in cases where its use would endanger the integrity of the knee, there was sufficient reason for preferring supra-condylar osteotomy. In his opinion, osteotomy, especially if performed with antiseptic precautions, was one of the greatest surgical advances of the century; far from having met with any serious results after either the supra-condylar or the tibial operation, he had not even met with the formation of a drop of pus after them. A patient sixteen years old—the oldest one on whom he had done the supra-condylar operation—had a temperature of 102° F. on the third day, and another slight rise took place afterward, but there seemed to be no local condition at fault, and the patient made a good recovery.

Dr. C. T. POORE called attention to the importance of knowing the exact pathological condition that lay at the bottom of knock-knee, without which knowledge there could be no firm foundation for treatment. In many cases of apparent knock-knee there was really no bony lesion; where there was one, he believed it to be rhachitic, traumatic cases being excluded. In the early stage of rickets, before consolidation had taken place, unquestionably the bones could be bent, but he could not understand how they could be straightened by mechanical means after consolidation had taken place. Dr. Gibney had seen the spontaneous cure of knock-knee of true bony origin (for his word was to be taken without question), but such cases could not be numerous; as for himself, he had not seen any. He thought that knock-knee of rhachitic origin was much more common in New York now than it had been a few years ago, and the fact that so few adults were seen with it was due to the comparative exemption of this country from the disease. All cases could be treated successfully with splints properly applied, if they were taken in time, but he could not see what was to be gained by continuing their use beyond a certain length of time if no benefit had been produced; if the deformity could not be corrected when the bone was soft, certainly it could not after it had become hard. The age at which consolidation took place varied in different children, according to the state of the nutrition. A deformity remaining after it had occurred called for an operation. In most of the cases of osteotomy hemorrhage might have been avoided. He had never kept a patient in bed more than five weeks. As a rule, he removed the plaster-of-Paris in the fourth week, and the patient was out of bed within a few days. He had never known the deformity to return. As to osteoclasia for bow-legs, he thought it far better than manual force, for, if the curvature was far enough away from the malleoli, the fracture could be produced at any desired point. He had never seen any accident from the operation, nor had he seen it fail to correct the deformity. Long curves, he thought, were better treated by osteoclasia, while short, angular curves, near the epiphyses, and anterior curves, were more suitable for osteotomy. He did not employ Listerism, strictly speaking.

Dr. M. H. HENRY said that for many years, at the State Immigrants' Hospital, there had been a great number of children of foreign birth. Only a few Italian children had deformities of the lower limbs. Most of the deformed were rhachitic, and

with better diet, bedding, and clothing, they almost always recovered with little or no surgical treatment.

Dr. M. J. ROBERTS remarked that, in connection with the rarity of bow-legs and knock-knee in the adults of this city, it should not be forgotten that the death-rate was greater among dyscrasic children. Moreover, recovery from these deformities was not generally complete, and he could point out many persons with moderate deformities on the streets. It would be found that they were incapable of prolonged locomotion or of standing for a considerable length of time. He showed photographs illustrating the statement that recovery was not generally complete. He differed with Dr. Gibney as to his statement that in bow-legs the deformity pertained to the entire limb; photographs of the denuded bones showed that their shafts were nearly or quite normal in shape, and that the trouble was at the joint and at the junction of the epiphysis with the diaphysis. Although spontaneous recovery would often occur, nature could be aided in almost every case. The scope of manual force was limited to cases in which the bone was quite soft. Different mechanical appliances had proved of benefit, especially the one devised by Dr. Davis. It was important that instruments of precision should be used in determining the degree of curvature—without such a criterion, the statement of a surgeon that a patient had recovered was not of much value. Dr. Roberts regretted that more had not been said in the paper as to the means of performing osteotomy. There were objections to chisels, but, by means of his circular saw, an awkward operator was not likely to do harm.

The PRESIDENT inquired as to the influence of sex on the frequency of rhachitic deformities of the lower extremities, and also on the occurrence of spontaneous cure. Anxious mothers had often expressed to him their solicitude as to their little girls with bow-legs.

Dr. GIBNEY replied that, so far as he could remember, the statistics of the Hospital for the Ruptured and Crippled showed about the same number of cases in the two sexes. A great many women who had suffered from bow-legs in early childhood would be found to have flat-foot. He thought that a good many of the cases seen in adults in this city were not cases of knock-knee of the kind treated of in his paper, but occurred in stout men, and were of an atonic type, as described by Little.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

AN adjourned annual and a stated meeting, held November 24, 1884.

Address of the Retiring President.—Dr. S. O. VAN DER POEL, the retiring President, read an address in which he referred to the amount and quality of the work done by the society during the past year, and to the large number of new members—one hundred and twenty-seven—since the last annual meeting, and thanked the society for the uniform courtesy which he had received during his term of office.

Address of the President for the Ensuing Year.—Dr. DANIEL LEWIS then called the stated meeting to order, and, after speaking in complimentary terms of the retiring President, and promising to advance the interests of the society as far as lay in his power, referred to the importance of all physicians who wished to take part in framing laws relating to the medical profession in the county and State joining the society, and said that the law of 1880 regulating the practice of medicine in the State of New York had proved more far-reaching and effective than even its framers had anticipated. The necessity for a State Medical Examining Board as a means of suppressing quackery and promoting a higher grade of medical education was obvious. Such a board, however, should it be organized, as it was proba-

ble it would be in the near future, should have power to revoke a license to practice for sufficient grounds. He also thought it might add to the scientific interest of the meetings if the gentlemen expecting to take part in the discussion of any given paper would send their names to the secretary, that the fact might be made known on the cards of announcement. He recommended timely measures against the possibility of an epidemic of cholera. The donation which the College of Physicians and Surgeons had lately received from Mr. Vanderbilt would probably soon lead to a change of location of that college, and he therefore thought it advisable that the society procure, at an early date, another hall in which to hold its meetings.

Standing Committees.—The President then announced the following members of committees for the ensuing year: On Hygiene, Dr. Stephen Smith, Dr. Alexander Hadden, Dr. E. H. Jones, Dr. Cyrus Edson, and Dr. William L. Hardy; on Ethics, Dr. George A. Peters, Dr. W. T. Alexander, Dr. Mark Blumenthal, Dr. C. O. Lee, and Dr. Edward Waitzfelder; on Prize Essays, Dr. F. R. Sturgis, Dr. Frank P. Foster, and Dr. W. R. Birdsall; Auditing Committee, Dr. P. Albert Morrow, and Dr. Gorham Bacon.

On motion of Dr. VAN DER POEL, the matter of obtaining a suitable hall for the society was referred to the Comitia Minora.

On the Third Stage of Labor.—Dr. SIMON BARUCH read a paper with this title, and said that his reason for doing so was that experienced and learned obstetricians were still at variance as to the proper method of conducting the third stage of labor. He then briefly referred to the common division of labor into three stages, the first, second, and third, which he accepted. In general terms it might be said that in proportion as labor advanced was any deviation from the normal processes dangerous to the mother. With the advent of the third stage the patient was ushered into a condition in which the perils from abnormal processes culminated. Here attention to details which in themselves might seem insignificant was all-important.

There were three methods of dealing with the placenta in vogue at present. The first was the ancient method of pure expectancy; the second consisted in active assistance in the removal of the placenta, and had had as outgrowths the Dublin and afterward the Credé methods. The third, or eclectic method, occupied a middle ground between the extremes of expectancy and energy of procedure. The author thought that here, as elsewhere, the golden mean was to be desired. He then quoted the views of various authorities with regard to the value of these several methods, particularly the expectant and Credé's, and showed that many of those who professed to practice Credé's method failed to do so in fact. Reliable statistics of cases treated according to the expectant plan and the method practiced by Credé showed the advantages of the latter.

It probably had happened to every obstetrician to meet with cases in which the placenta had been retained perhaps for two hours without doing any harm, but it seemed unreasonable to maintain that it was of any advantage to have the membranes retained for a length of time. The author had had but a single case in which the placenta had been unduly retained within the uterine cavity. He thought that many lives had been lost by waiting for the uterus to expel the placenta of its own accord after abnormal or protracted labor. Every case should be treated according to its own peculiar features. It could be of no advantage to leave a woman lying hour after hour in her own gore, in anxious suspense and great discomfort, waiting with the idea that we were giving nature fair play for the expulsion of the placenta. The eclectic method sought to make use of all the advantages possessed by Credé's while omitting any which it might be well to discard. The author then referred

to the twofold power of contraction possessed by the uterus, the one being tonic and the other clonic. The latter only constituted a true uterine pain. The former was illustrated during uterine involution after delivery. These clonic spasms for the expulsion of the placenta, or the third stage of labor, might be modified and rendered more or less abnormal by one or more unnatural conditions, such as social surroundings, peculiarities in the second stage, the use of chloroform during labor, and a tendency to hæmorrhage. The author spoke of his experience in midwifery among the colored people of the South as compared with that among the higher classes of the metropolis. In the woman of high social position many hours usually passed in what were called preparatory pains, and by the time the second stage had been reached the nervous system was in a high state of reflex irritability, the expulsive contractions were not so steady and forcible, and here he believed existed a cause of rupture of the perinæum, as during the last four years of his obstetric practice, which had been in the city, he had seen more cases than during his fifteen years' previous practice in the South. In the negroess he often found the placenta expelled into the vagina very soon after the birth of the child, while this was seldom the case in the city woman. In the latter class of cases haste in the third stage of labor was strictly to be avoided; perfect rest under proper surveillance was the true course. Injudicious friction or pressure would cause undue uterine irritability, and fail of the desired object, namely, to obtain strong expulsive contraction. The fact that chloroform had been given indicated that the uterine powers had been reduced; clonic contraction showed that the power of the organ which was necessary for the expulsion of the placenta had been diminished. He would therefore recommend that the use of the anæsthetic be moderated as the third stage was approached, and that Credé's method be aided by the Dublin method of following the uterus down with the hand. When there was a tendency to hæmorrhage Credé's method alone could not be relied upon; the uterus should be followed down as the child receded from its cavity, and should not be permitted to pass from under the hand. The method which he adopted doubtless was that practiced by many other physicians, consisting in gently stroking the uterus to stimulate it to contraction, of grasping it with the outspread fingers, intensifying the strength of the contraction, and making downward pressure for the purpose of aiding in expelling the placenta. It might be necessary, in some cases in which the placenta was grasped by the neck of the uterus, to make traction upon the cord, or to insert the disinfected fingers and make direct traction upon the placenta itself. It was his custom to place the two fingers of the right hand within the vulva while the uterus was being compressed with the left hand, in order to guard against too forcible expulsion and rupture of the membranes. The author regarded twisting of the membranes as objectionable, as it was liable to lead to their being torn.

Dr. WILLIAM M. POLK heartily agreed with the author of the paper in saying that we were not in a position to discard Credé's method. It seemed to him that the method had been so rich in good fruits since its introduction into America, as shown by statistics, that its advantages were placed beyond controversy. He certainly had never seriously contemplated abandoning it in any respect, and he could not understand how any practitioner of experience could say that Credé's method should be given up. There were one or two points, however, in the paper to which he must take amiable exception. For instance, ceasing the administration of chloroform at the close of the second stage, or as the child's head began to distend the perinæum, seemed to him as very improper, as this was just the time when the patient most felt the need of the anæsthetic, and he thought the damage which pressing the chloroform at this moment

might do would be fully compensated for by the relief which it would give. Of course every one knew the danger of producing inertia of the uterus, and this danger had appeared to him to be so great that he had at moments almost contemplated never using the agent again, but when he did employ it he continued its administration until the head was virtually expelled.

He further disagreed with the author with regard to twisting the membranes. He had seen no harm come from the practice, and he thought it might do good. If in five minutes after the birth of the child the uterus did not show a tendency to contract and expel the placenta, he thought it our duty to begin to practice Credé's method, and, if, after the lapse of from half an hour to three quarters of an hour, by this method the membranes were not expelled, he should regard the case as a pathological one.

Dr. BARUCH inquired of Dr. Polk what had been his experience with reference to expulsion of the placenta into the vagina shortly after the second stage of labor among the women of higher social life.

Dr. POLK replied that he had found experience to vary in this matter, depending upon the health and strength of the woman. In weak women the placenta was liable to be retained within the os, while in the stronger, whatever might be their social standing, it would probably be expelled.

Dr. ROBERT A. MURRAY believed, with Dr. Baruch, that no method would take the place of Credé's in cases demanding its use, but he believed also that nearly all the physicians in New York city practiced a method which was superior to Credé's in the large majority of cases of midwifery. It was taught, he believed, by all, or nearly all, professors of midwifery in the city that, after the second stage of labor had been completed, the physician should keep the hand upon the uterus, aiding in its contraction, until the organ had contracted permanently. If this were done, the true expression method of Credé would only be applicable in cases in which hæmorrhage was threatened after the use of chloroform, or after extreme exhaustion of the patient from prolonged or instrumental delivery. He practiced twisting of the membranes.

Dr. J. H. FRUITNIGHT agreed with the author as to the advantage of placing the hand upon the vaginal orifice to guard against too rapid expulsion of the membranes. He considered twisting of the membranes a proper procedure. Out of six hundred and fifty cases of midwifery, he had had retention of the membranes in one case, and post-partum hæmorrhage in three or four. He regarded the placenta as a foreign body, which should be expelled from the cavity of the uterus as soon as practicable.

Dr. LEWIN thought the paper gave one the impression that the Dublin school and English physicians interfered in the third stage of labor more than they did in fact. He spoke from his experience in the hospitals and attendance on societies at which this subject had been discussed. He thought he was not mistaken in his recollection that their practice usually was to adopt the expectant plan; at the same time, however, they would not exclude active assistance, especially in cases which seemed really to call for it. They did not object to removal of the placenta when it lay free in the vagina, and they favored twisting of the membranes, but not pulling upon them.

Dr. MALCOLM McLEAN directed attention to the importance of having a clean vessel at hand into which to cast the placenta, in order that it might be examined carefully, to see whether a portion of it had been left in the uterine cavity.

Dr. BARUCH, in closing the discussion, said, with regard to Dr. Polk's statement concerning the use of chloroform, that he recognized the desirability of lessening the patient's sufferings, which were very intense at the close of the second stage, and for that reason he continued its administration in cases which

demand the employment of the anæsthetic up to a moment before the birth of the child. His only objection to twisting the membranes was that there was a temptation and a liability to make some traction during the procedure, and this would favor tearing.

A Medical Register.—Dr. PIFFARD offered resolutions empowering the Comitia Minora to provide for the printing of a medical register including the names of members of the society. Carried.

CHICAGO GYNÆCOLOGICAL SOCIETY.

Meeting of November 21, 1884.

The President, Dr. H. P. MERRIMAN, in the chair.

[For the notes from which the following report is condensed we are indebted to the society's editor, Dr. W. W. JAGGARD.]

Discussion on Abortion.—Dr. EDWARD WARREN SAWYER, who opened the discussion by appointment, first called attention to the frequency of abortion, but remarked that he thought experience did not bear out Mme. La Chapelle's estimate that it was as frequent as labor at term. In the course of ten years he had seen only between forty and forty-five cases. In his own practice none had been fatal, and he had seen but one fatal case in the practice of others, which case was complicated with cellulitis and pneumonia. Abortions due to natural causes usually terminated favorably, while those that were caused by accidental or intentional violence constituted the *bête noir* of the profession; in the former the ovum and the decidua were commonly expelled entire, but in the latter there was apt to be more or less mutilation. When the embryo was expelled before the membranes, it was frequently lost; moreover, complete absorption of the embryo might take place as late as the fourth week; so that the absence of the fetus was not a positive indication that there had been no abortion.

As to the treatment of abortion, the two distinct courses—the radical method of evacuating the uterus immediately, and the plan of waiting patiently—had each in turn been advocated and opposed. He himself had followed the expectant method; he had waited as long as a week for nature to complete the expulsion of the ovum, and he had never seen any untoward consequences from it. He enjoined absolute rest in the horizontal posture, and gave quinine and alcohol as they were required. Apart from the vaginal tampon, he used no local treatment further than vaginal injections of liquor sodæ chlorinatæ. He objected to the removal of the whole or any part of the product of conception from the uterus, because: (1) it was painful, involved the use of an anæsthetic, and predisposed to hæmorrhage from uterine inertia; (2) an assistant was necessary; (3) the amount of unavoidable injury to the genital tract was considerable.

In conclusion, Dr. Sawyer showed an unusual specimen, consisting of an intact amniotic sac, inclosing a five-months fœtus, with a velamentous insertion of the umbilical cord. A separation having taken place between the amnion and the chorion, the chorion, placenta, and decidua had remained within the uterus. The amniotic sac having been expelled intact, he had paid no further attention to the mass, and had told the patient that nothing more was to be feared, but the next morning he was told that, an hour after his departure, pain and hæmorrhage had come on again, and another mass had been expelled, which proved to be the chorion, placenta, and decidua. His friend, Dr. Albert G. Paine, had seen a case quite similar.

Dr. W. W. JAGGARD said that separation between the amnion and the chorion was relatively infrequent during the sixth and seventh months, but was not uncommon at an earlier period. In regard to the treatment of inevitable abortion, when the ovum

was expelled in an intact or mutilated condition, and the decidua or portions of the fetal membranes remained within the uterine cavity, it was necessary to regard the natural history of the condition, which had been appropriately termed by Breslau "incomplete abortion." Its terminations were, briefly, as follows: 1. Spontaneous elimination of the retained portions, as the result of retrograde metamorphoses, accompanied by intermittent hemorrhages and uterine contractions. 2. Sometimes, although seldom, the hemorrhage ceased entirely and the patient was apparently well, but, after an interval varying from a few days to weeks or months, pain and hemorrhage suddenly came on, and the mass was expelled. This retention, with a long interval of rest, was noticed when the placental or decidual attachments were intact. That this act constituted the termination of the labor, so to speak, was shown by the fact that the secretion of milk was established at this time, and the reductive metamorphosis began. 3. More frequently the retained decidua or placenta underwent suppurative or ichorous changes, and there was danger of systemic infection, in spite of the thrombosis of the uterine sinuses and the proliferative change in the uterine mucosa. 4. The retained mass became converted into placental or fibrinous polypi, always requiring operative interference.

Each of these four terminations involved danger to the mother. Their natural history (for the elucidation of which Spiegelberg was entitled to special recognition) made in favor of the so-called radical treatment, evacuation of the uterus at the earliest possible period. The plan recommended by Dr. Mundé, in the "American Journal of Obstetrics" for February, 1883, was worthy of high commendation. The use of one finger within the uterus and one hand placed over the fundus was preferable to that of instruments when it was equally effective. The subsequent treatment was of extreme importance. Whenever the cavity of the uterus was invaded by the finger, or any instrument, it should be irrigated with some antiseptic solution. Two-per-cent. solutions of carbolic acid, and a one-to-two-thousand solution of bichloride of mercury, were efficient in the destructive conditions that favored decomposition and sepsis. After the irrigation, it was a good plan to insert a crayon of iodoform, weighing not less than six grammes, within the uterus. Symptoms of iodoform poisoning rarely if ever followed the use of this quantity, ten grammes being usually required to produce toxemia.

Dr. PHILIP ADOLPHUS said that abortions were more common among multiparæ than among primiparæ. By way of prevention, he thought, women ought to sleep by themselves at the times that corresponded to their menstrual periods. When abortion was inevitable, the treatment must be symptomatic. To arrest hemorrhage, the cervix should be plugged, not the vagina, and, for obvious reasons, tents of tupelo or of laminaria should be used, not those of sponge. When there was fætor, the uterus should be emptied with either the finger or a curette.

Dr. DANIEL T. NELSON could not be satisfied until the uterus was empty; he had no sympathy with the expectant plan. The manner of emptying the uterus was of importance; if the cervix was dilated or dilatable, the cavity should be cleared out at once with the finger; if it was neither dilated nor dilatable, it should be plugged, in the manner indicated by Dr. Adolphus, with tupelo or laminaria tents. If the cervix was partially dilated or dilatable, and the uterus was fixed, we should give an anæsthetic to relax the spasm, and proceed as in the first instance—he had no fear that ether would predispose to uterine inertia. In dissecting off the placenta, it was advisable to "glove" the finger-tips with the amnion. In the early months, when the ovum was attached near the cornua, it was necessary to bear in mind the possibility of irregular contraction and the

inclusion of a bit of the placenta within one or the other of the cornua—both of them must be thoroughly explored. When he employed intra-uterine irrigation, which was by no means invariably, he used a one-half-per-cent. solution of carbolic acid or a weak solution of ordinary table salt. It should be hot, from 110° to 120° F., and hot water alone, in the absence of the acid or salt, was an effective cleansing agent, and tended to induce uterine contractions. He had had no experience with iodoform, but regarded it as superfluous in all cases.

Dr. WILLIAM E. CLARKE was more in dread of hæmorrhage and sepsis than of injuring the genital tract. He always emptied the uterus at the earliest possible moment.

Dr. T. D. FIRCH did not regard Dr. Sawyer's specimen as showing a rare condition; he had frequently seen a like separation at the same period. He agreed with Dr. Nelson as to treatment; still, when the cervix was not dilated, he was disposed to favor the expectant plan. At the time of abortion the uterus was in a physiological condition; at a later period operative interference was attended with increased risk, as the organ was then in a pathological state. Usually he found the placenta and the membranes detached, within the lower segment of the uterus. He was not in favor of intra-uterine injections; the vaginal douche was sufficient.

Dr. WILLIAM H. BYFORD said that abortions were more frequent in large cities than in the country. When applied to large communities, Mme. La Chapelle's estimate was not exaggerated. In the country, he thought, one abortion to three labors was about the average. Abortion was never a physiological process, although those caused by disease of the ovum were attended with less danger than those resulting from morbid alvine changes. In the former, the circulation was impaired and the embryo perished, and expulsion followed with a minimum of hæmorrhage, pain, and sepsis. When the cause of abortion was external violence or decidual endometritis, the danger in each of the three directions was increased. The condition shown in Dr. Sawyer's specimen was rare at so late a period, but comparatively common during the early months.

In regard to prevention, he had observed two clinical facts in connection with the habit of abortion. When uterine contractions were the prominent symptom, abortion could be arrested in many cases by absolute rest and opium. When hæmorrhage was severe, all attempts at arresting the process were usually futile. This was especially true during the first three months; at a later period, even when hæmorrhage was severe, abortion might be arrested. As to the treatment of inevitable abortion, he had never seen the time when champions of the expectant and of the radical courses of action did not exist. The treatment must be governed by a consideration of the individual case. In any case, the patient must be carefully watched. He had never seen the hæmorrhage of abortion prove immediately fatal; the acute anæmia, however, might induce a condition that would render the woman more susceptible to sepsis or any intercurrent disease. He feared sepsis and metro-peritonitis more than hæmorrhage. He was conservative as to operative interference, and would let Nature do what she could, interfering only in case of her failure. The finger was preferable to any instrument, and it was not necessary to insist upon the removal of the placenta or the membranes with mathematical accuracy; if the placenta was grasped by an irregularly contracted uterus, the free portion might be cut off, and the rest allowed to remain. If two thirds of the placenta were removed, and the uterus was well contracted, the patient was to be considered in a safe condition. In the event of sepsis, the whole intra-uterine mass should be removed.

Dr. JOHN BARTLETT had found abortions as frequent as labors at term. The product of conception was usually ex-

pelled entire. When abortion was inevitable, two conditions were requisite to justify interference: 1. Dilatation of the canal of the cervix to the extent necessary for the passage of two fingers. 2. More or less complete separation of the decidua from the uterine surface. Until these conditions were present, the vagina ought to be tamponed; he was in the habit of employing the kite-tail tampon. He had seen two cases of retention of the placenta—for three months in one and four months in the other—without symptoms. He had adopted Dr. De Laskie Miller's rule of allowing the tampon to remain in the vagina for twenty-four hours, and had frequently continued that treatment for three days. Braun's colpeurynter was a useful tampon, but no tampon was effective when the hemorrhage was not passive and the uterine contractions were severe. It was necessary to diagnosticate abortion from placenta prævia. Placenta prævia implied simply an *error loci* of the ovum; it was included between the ring of Bandl and the external os. He had never seen a case of abortion terminate fatally from hemorrhage.

Dr. A. H. FOSTER had seen one case in which the placenta was retained for four months without causing serious symptoms. He urged the importance of treatment during the puerperium.

Dr. E. C. DUDLEY referred to the danger of cervical laceration and subinvolution in consequence of abortion. The best method of applying the tampon was with Sims's speculum.

Dr. C. W. EARLE took the middle ground in regard to the radical and the expectant methods of treatment; he did not agree with Dr. Mundé.

The PRESIDENT indorsed Dr. Byford's remarks on the etiology, and said he did not like to use ergot, as it caused irregular contraction of the internal os, imprisoning the placenta without favoring its expulsion. He produced uterine contractions by dilating the os, and then followed the expectant plan.

Dr. SAWYER had observed abortion in the lower animals, and had concluded that nature required but little interference. He briefly sketched the expectant treatment that he was in the habit of recommending.

Casts of the Uterus, gravid and non-gravid, were shown by Dr. BARTLETT. They had been made for purposes of class illustration, and were regarded as exceedingly ingenious.

OBSTETRICAL SOCIETY OF PHILADELPHIA.

Meeting of November 6, 1884.

The President, Dr. R. A. CLEEMANN, in the chair.

Removal of the Uterine Appendages for Menstrual Epilepsy; Recovery.—Dr. E. E. MONTGOMERY showed specimens and read the history of the case. The patient, seventeen years old, was admitted into the Philadelphia Hospital April 1, 1884. In childhood she had an attack of inflammatory rheumatism, and began to have epileptic seizures in her thirteenth year. They were slight at first, but had recurred every month, increasing in number and violence, so that now she was unconscious for ten days or a fortnight out of each month. Only once had there been a trace of menstrual discharge, and then for a single day only. She was pale, flabby, anæmic, poorly developed, and extremely nervous. The external genitals were but slightly developed and the uterus was small. There was no special tenderness over the pelvis. Iron, tonics, and a generous diet had been employed; the bromides were not well borne. Owing to her youth and the fact that she had not yet menstruated, it was thought best to try to establish menstruation, and to exhaust the antispasmodics, before resorting to operative interference. All remedial measures having failed completely, the ovaries and

tubes were removed on the 13th of September. Her recovery was uninterrupted until the night of the 26th, when she had four epileptic seizures, and there were slighter attacks during the next three nights, but they were shorter, and during the intervals she was perfectly conscious. During the first four days of October she had spells of staring, with momentary unconsciousness, growing less frequent and lighter. A well-marked convulsion occurred on the night of October 14th, and was followed by from one to four convulsions daily until the 29th, but they had not been so severe as before the operation.

Removal of a Parovarian Cyst; Recovery.—Dr. MONTGOMERY related this case also. An English woman, thirty years old, married, had never been pregnant, but had had an enlargement of the abdomen for seven years. Her menstruation had always been regular and never excessive. It now occurred every three weeks, the flow was very slight, and she suffered from severe pain in the lower part of the abdomen and through the hips the week before it came on. She suffered at other times from pain in the feet and legs, and from a sensation of weight. The tumor had been tapped about six times; the fluid was always of a pale straw-color. The largest quantity removed at any one time was forty pounds. Previous to its removal her weight was one hundred and two pounds. The last tapping was done on the 27th of June. She had had four attacks of peritonitis. When she was first seen, two weeks after the last tapping, the abdomen was swollen and tender, and there was distinct fluctuation. Since that time the abdomen had increased considerably in size, being distended throughout by a prominent tumor, almost symmetrical but projecting slightly to the right side. The circumference at the umbilicus was thirty-two inches, the distance from the symphysis to the umbilicus seven inches, and from the symphysis to the ensiform cartilage thirteen inches. There was distinct fluctuation over the whole tumor, and coughing projected the whole mass forward and downward. The patient's general condition was good, and she was quite active. A parovarian cyst having been diagnosticated, it was decided to make an exploratory incision and remove the tumor if possible, or, if the adhesions proved too great to allow of that, to open the sac, stitch it to the integument, and introduce a drainage-tube, so as to secure obliteration of the sac. On the 9th of October an abdominal incision was made, four inches long, and, although there were adhesions throughout, they were for the most part broken up without difficulty, and no ligatures were needed. The intestines were not seen, being concealed by old inflammatory deposits. The right ovary was found enlarged, and was removed. The wound was closed with seven sutures, and a glass drainage-tube was introduced. A thick layer of salicylated cotton was placed over the wound. Suppositories of morphia were used to control pain, which continued to a greater or lesser extent for two weeks, arising partly from inflammatory conditions and partly from collections of gas in the intestines. The abdominal wound discharged freely, three ounces the first day. The drainage-tube was removed four days after the operation, but the discharge of bloody serum, pus, and flaky lymph continued for full two weeks later, when the wound closed entirely and the patient was discharged.

Placental Polypus simulating Malignant Disease of the Uterus.—Dr. B. F. BAER presented the specimens and related the history of the case. A married woman, thirty-five years old, had had two children at term, the last one twelve years ago. Since that she had had several abortions, but otherwise had had good health. Her mother had died, at the age of thirty-eight, of cancer of the uterus. In the early months of the present year the patient first noticed that her menstruation was becoming too frequent, that she had expulsive pains with it, and that there was a fœtid, watery discharge in the intervals. The

loss of blood increased, and she soon began to show signs of failing health in pallor and loss of flesh. She would not allow a physical exploration until the latter part of July, when she had a violent flooding, with great pain. Dr. R. Armstrong, of Lockhaven, Pa., who was her physician, then made an examination, and found the cervix and the os uteri normal, but the body of the uterus enlarged to more than double its natural size, apparently symmetrical and rather softer than usual. The hemorrhage was controlled by means of ergot and rest. Although the grumous, fetid discharge and the uterine tenesmus continued, she did not have another severe attack of metrorrhagia, probably because of her exsanguinated condition and of the fact that she was suffering from septic absorption. Her temperature rose as high as 104° F., and she had distinct rigors. Her abdomen was tympanitic and very tender to the touch. The condition of the uterus led the doctor to introduce two tents into the cervical canal on the 23d of September. They were allowed to remain twenty-four hours, although their presence increased the violence of the symptoms. When they were removed, a rather soft, friable mass could be felt presenting at the internal os. This led to the fear that the disease might prove to be malignant. A severe colliquative diarrhœa now set in, and the patient's strength became so much reduced that nothing could be done except to give remedies to check the diarrhœa and prevent collapse. On the morning of the 25th, through the kindness of Dr. Armstrong, Dr. Baer saw the patient, who then had a temperature of 105°, her pulse being rapid and feeble. Her stomach was irritable, rejecting everything that was taken, and her bowels were still quite relaxed. Her face presented the ashy hue of malignant disease. The outlook was not favorable for an operation requiring dilatation of the cervix sufficiently to remove the diseased tissue which evidently occupied the uterine cavity, but that was the only course to pursue. Ether having been given, the uterus was found retroverted and fixed by adhesion. The cervix was rigid and but slightly patulous. In view of the existence of peritonitis, it was thought best to try to remove the contents of the uterus without any attempt at further dilatation, as it was feared that the adhesions might be ruptured and the inflammatory action increased. The wire loop of an écraseur was passed through the os, and, by careful manipulation, it was fortunately guided over the tumor and up to its attachment. The loop was closed by traction, and thus the pedicle was severed. The tumor was then seized with a volsella and withdrawn. The index-finger could now be passed into the cavity of the uterus. The pedicle was situated on the posterior wall, near the fundus. The tissues at that part were soft and friable, but the remainder of the surface of the uterine cavity appeared to be free from disease. The stump was cauterized with nitric acid, and a two-grain opium suppository was placed in the rectum. Convalescence was rapid and satisfactory.

On section and close examination, the specimen very much resembled placental tissue, and the microscope showed typical placental villi in its structure. It was the "placental polypus" described by C. Braun in 1851, and somewhat resembled the "fibrinous polypus" of Kiwisch, who thought that these polypi might arise from long-persistent hemorrhage, a kind of apoplexy of the womb, a large coagulum forming, the upper part consisting mostly of fibrin and adhering by a stalk to the uterine wall, while the lower part consisted of red, soft coagulum having a coat of firm fibrin. Scanzoni did not admit this view, but contended that these were cases of abortion, and would, therefore, fall under the class of placental polypi (Barnes). Dr. Baer's own experience agreed with that of Scanzoni. These polypi caused profuse metrorrhagia, and sometimes, as in this case, blood-poisoning. The case furnished another strong argu-

ment in favor of the entire removal of the decidua or placenta after abortion. Who could tell how many lives were lost, or in how many cases health was undermined, by a neglect of this procedure? Death would inevitably have occurred in this case if the uterus had not been emptied. The patient might suffer for months or years as a result of neglect. In this instance the fault was with the patient, for she had been properly advised by her physician. It was true that many patients escaped without serious injury, but that did not prove that the principle and practice of immediate removal should not always be considered the safe course, for here was a case where a neglected abortion had apparently passed off safely, but it almost destroyed the patient's life a long time afterward. Malignant disease was properly suspected from the rapid development of such grave symptoms, from the general cachectic appearance, and from the sensation conveyed to the finger when touching the growth *in situ*. But, when it was found that it had a limited point of attachment, and that the uterine cavity was healthy at all other points, this hypothesis was weakened, and the subsequent examination of the mass established its benign character.

Dr. MONTGOMERY remarked that, where dilatation of the uterine canal had already been partly accomplished, the best instrument for continuing the dilatation was Dr. A. H. Smith's mechanical urethral dilator.

Removal of a Hair-pin from the Uterus.—Dr. BAER showed a hair-pin removed from the uterine cavity of a patient sent him by Dr. Pancoast, of Camden, N. J. The woman, believing herself to be pregnant, had tried to produce an abortion by inserting the pin, grasping the points and introducing the blunt end, using a mirror to obtain a view of the parts. The presence of the pin was readily detected with the uterine sound. At first he thought of dilating with tents, but, as the patient was greatly alarmed and very importunate, he used a steel dilator. In the withdrawal of the pin, one of the points became imbedded in the tissue of the cervix, and dissection was required to release it.

Dr. WHARTON SINKLER showed a hair-pin removed from the vagina of a patient who had tried to introduce it into the uterus to produce abortion. She had failed in her purpose, and also in removing it from the vagina. He found its points widely separated, presenting downward, and hooked into the vagina wall. By bringing the points close together, the pin was removed without difficulty. It had been in the vagina for some time.

Dr. MONTGOMERY, when he was a student, had seen a hair pin removed from the vagina that was thickly incrustated with calcareous matter.

Miscellany.

THERAPEUTICAL NOTES.

Cocaine in Laryngology.—Dr. Edmund Jelinek contributes some interesting statements on this subject to the "Wiener med. Blatt." A the result of numerous experiments in Schrötter's clinic, he says that if the hydrochlorate of cocaine, either in powder or in the form of strong solution, is applied to the mucous membrane, a marked diminution of the sensibility of the parts is noticed within a minute and a half. A solution of one part in ten or twenty is recommended, the formula suggested being as follows:

Hydrochlorate of cocaine.....	1 part;
Alcohol.....	2 parts;
Distilled water.....	3 "

In examinations of the nose and larynx, it is sufficient to pencil the anterior and posterior surfaces of the soft palate, the posterior wall of

the pharynx, and the base of the tongue, the process being repeated after the lapse of a minute, if necessary. The local anesthesia continues for about ten minutes. Professor Schrötter speaks in the highest terms of the new remedy. He has produced most gratifying results by its use in cases of acute and tuberculous laryngitis attended with extreme irritation. Both Schrötter and Störk have removed papillomata from the vocal bands after inducing local anesthesia, and testify to the value of the method.

Kéfir.—Zuber has published a long article upon this subject, in a recent number of the "Gazette hebdomadaire de médecine et de chirurgie." He defines kéfir as kunyss made from cows' milk, but says this is not an exact definition, although it indicates the origin of the preparation. He goes on to say that kéfir is "the product of a peculiar fermentation of milk," and is essentially an alcoholic fluid heavily charged with carbonic-acid gas. The ferment, when isolated, is described as a yellowish substance, which tends to form small granular masses. When this is added to milk, fermentation rapidly occurs, carbonic-acid gas being evolved, while the casein is coagulated. Commercial kéfir is prepared by adding to a bottle of milk a teaspoonful of the ferment, and the milk is kept at a temperature of 15° R. for twenty-four hours, being agitated at frequent intervals. At the end of this time it is filtered, transferred to a fresh bottle, which is carefully corked, and again shaken, for twenty-four hours. This process is repeated once more, and at the end of the third day the strong kéfir is formed. A good preparation should foam violently when the cork is removed, should have a creamy consistence and a pleasant acid smell and taste, and should be free from lumps of casein.

The following analyses are given by Tuschinsky, showing the change in cows' milk after it has passed through the fermentation process:

	Cows' Milk.	Kéfir.
Albumins	48·00	38·00
Fats	38·00	20·00
Lactose .....	...	9·025
Alcohol .....	...	8·00
Water and salts	873·00	904·975
	1000·00	1000·000

The density of milk is 1·028, that of kéfir 1·026. Beginning with two or three glasses daily, the patient should increase the amount until eight glasses are drunk each day. The writer states that the indications for the use of kéfir are the same as for that of kunyss, viz., impaired nutrition, especially such as results from acute affections or digestive troubles. He cautiously adds that, although the most extravagant praise has been bestowed upon this new remedy, more careful observations are necessary "in order to define its precise therapeutic value."

Jaborandi in Urticaria.—The same journal publishes the following formula for urticaria, recommended by M. Guéneau de Mussy:

Powdered jaborandi,	
Extract of guaiacum, each,	2 grains;
Benzoate of lithium	3 "

Make one pill. The patient is to begin with two pills daily, and increase the number to four in the twenty-four hours. Sulphur baths may be used advantageously in connection with the internal treatment.

Caffeine as a Stimulant.—The same journal gives an abstract of an article by M. Huchard, in which the following formula appears:

Caffeine,	
Benzoate of sodium, each,	75 grains;
Distilled water	9 ounces.

Dose, two to five teaspoonfuls daily. Where the remedy is rejected by the stomach, the following mixture is recommended for hypodermic use:

Salicylate of sodium	45 grains;
Caffeine	1 drachm;
Distilled water	45 minims.

The dose is from six to twelve minims. It is especially recommended in adynamic fevers. M. Huchard states that injections of caffeine are less painful than those of ether, that the former drug exerts direct influence over the cardiac contractions, and that it possesses the double advantage of being at once a diuretic and a stimulant. He has

employed it in the aligid stage of cholera, but his observations have not been sufficiently extended to allow him to speak confidently of its value.

Horsford's Acid Phosphate.—Dr. T. D. Crothers, of Hartford, Conn. ("Atlantic Journal of Medicine"), says that on the 1st of October, 1881, he began a series of comparative studies of the effects of this preparation and the phosphoric acid of the United States Pharmacopœia, which he continued until the 1st of April, 1882. They were made in nineteen selected cases of inebriety and opium addiction, the patients resembling each other very closely in natural vigor, degree of degeneration, and disease. The plan pursued was to begin the use of Horsford's preparation about two weeks after the patients' admission, when all the active symptoms had subsided, and continue its use for six weeks; then, after an interval of one week, try the pharmacopœial acid for an equal length of time, in the mean time noting the pulse, weight, and general condition of the patient every day. He reversed the order in other cases. The difference in every case, after excluding all possible complications, was very prominent, consisting of increased nerve-force, improved heart-action, lessened nutrient perversions, and a somewhat remarkable change in the delusions and insomnia present in many cases. The memory and all the mental operations were visibly strengthened—in one case the patient could not write to his wife, or concentrate his mind on any topic, unless he used a small dose of Horsford's preparation; the other acid would not answer, and, although he did not know the difference, it had not the same effect. The author's studies are not yet complete, because they do not cover a large enough field, or patients that have been treated long enough. But he thinks the following facts are already indicated from this limited study: 1. Horsford's acid phosphate is a remedy of great value in inebriety and opium-taking, particularly in building up functional energy and brain-force. 2. It exceeds the pharmacopœial acid in every case where this may be indicated. 3. As a nutritive medicine, so far, it seems unequalled in its power of restoring the building-up forces of the body.

MEDICO-LEGAL NOTES.

By HENRY A. RILEY, Esq.

The Seizure of Dead Bodies for Debt.—One of the curious questions which the old ecclesiastical lawyers discussed with a good deal of vigor was that of property in dead bodies, together with the further question whether they were liable to seizure for the debts of the living person. Some remnants of the discussion have survived in modern times, but the enlightened opinion of the age has been that the debts of a person do not affect in the least the right to proper and decent burial. It was a common opinion until quite recently that the Roman law allowed a dead body to be seized for debt, but no law of the Twelve Tables that has come down to us permits such seizure, although one of the provisions of the Third Table gave to creditors the singular power of cutting into pieces the body of living debtors who, under certain circumstances, refused to pay. (1 Burns, "Ecc. Law," 2586.) One of the commentators (Huber) is clear that the Roman law did not permit a body to be kept from burial, but thinks that one of the laws allowed the creditors to prevent the body from being carried to a distant burial place.

Stopping a funeral procession on the way to the grave, to insist on the payment of a debt, is such a scandalous proceeding that instances of it must be rare. This actually occurred, however, in 1784, when the funeral procession of Sir Bernard Turner had started from London and was proceeding to Hertfordshire. Some of the creditors made a formal arrest of the body, and stopped the journey until the friends entered into an engagement to pay the debts. It does not appear that the right to do this was ever tested, and no doubt the courts would have refused to enforce promises made under such circumstances. The English law, in the writ of *capias ad satisfaciendum*, directs the officer to produce the body of the debtor at a certain place, but this has never been construed to embrace deceased persons, and the reason of the writ is that he may satisfy the plaintiff of his debt. It would certainly be difficult for the deceased to do this, because at the moment of death all his property, real and personal, passes to heirs, next of kin, or executors, and they are the ones who must pay debts.

In Jones vs. Ashburnham (4 East, 465), Lord Ellenborough, com-

menting upon an earlier case (*Quick vs. Copeland*), where a mother was said to have promised to pay a debt of her son's in forbearance of the arrest of the dead body by the plaintiff, says such a course is "contrary to every principle of law and moral feeling. Such an act is revolting to humanity and illegal, and therefore any promise extorted by fear of it could never be valid in law." In 1842 occurred the case of *Reg. vs. Fox* (2 Queen's Bench, 247), where, under the English laws allowing imprisonment for debt, a person had been confined in jail and had died there. The deceased was in debt to the jailer also, and the latter refused to deliver the body to the relatives until his claims had been satisfied. An application was then made for a mandamus ordering the jailer to deliver the remains without delay, and this was granted without hesitation by the judges. In the same year a somewhat similar case occurred (*Reg. vs. Scott*, 2 Queen's Bench, 248), where the jailer, having claims against an imprisoned debtor who had died during confinement, refused to deliver the body to the relatives, and, when an interment became imperative, buried it within the jail limits. The case came before the Grand Jury, and an indictment was found against the jailer, alleging these facts, and stating further, as an aggravation, that he had buried the body "without any rite of Christian burial, or any funeral ceremony or observance, in a place not being consecrated ground or a customary or fit place for burial, to wit, a yard and within the precincts of the jail." On the trial Judge Maule held that the notion of a jailer being authorized to detain a dead body on account of pecuniary claims was a mistake, and that a jailer doing so was guilty of a misconduct for which he was liable to prosecution.

In this country the offense has been a very infrequent one, and but few of the States have any statutes on the subject, but in two of them at least (Massachusetts and Rhode Island) such laws have been passed. Those of Rhode Island are as follows: "The body of a deceased person shall not be liable to be taken for debt or damages on execution, or upon any process whatever, and if any officer shall, under color of an execution or process, seize or take the body of any deceased person for debt or damages, he shall be fined not exceeding five hundred dollars, or be imprisoned not exceeding six months." In Barnstable County, Massachusetts, a criminal case of this sort was once tried before the late Chief Justice Parsons, and the defendants were convicted, but let off with a small fine on the ground that they were ignorant that it was an offense. In this case the corpse was arrested on a civil process for debt on its way to the grave, in the public highway, in the presence of the friends of the deceased and of a procession which attended the funeral. (1 Russell on Crimes, 408.) The question as to whether there are persons who do actually own the dead body, and what kind of ownership it is, is an interesting one, but is not here discussed.

The Liability of Physicians for Irregularities in Certificates of Insanity.—It is exceedingly important that physicians should comply with all the requirements of the law in preparing their certificates of insanity, as these certificates are the basis of the orders of commitment issued by the magistrates. When such certificates are carelessly drawn, there may be a question of the liability of the physician for the irregularity, and, at all events, he places himself in an unpleasant position. In general, however, it may be said that, when the physician acts in good faith, a mistake as to the actual fact of insanity will not give a person a cause of action after the certificate of insanity has been presented to a court and has been there passed upon. In a case reported in an Eastern State, where suit was brought because the certificate was alleged to be false, the Court stated the law to be as follows: "In an action against a physician for falsely certifying, through malice or negligence, to the insanity of a person, who is thereby committed to the insane asylum, and the pleadings raise the issue as to the sanity of such person at the time when the certificate alleged her to be insane, the burden of proof is on the plaintiff in respect to the averment and claim that she was then sane. In such an action the falsehood, and not the insufficiency of the certificate, is the ground of action against the certifying physicians. Without statutory provisions to that effect there can not be a civil action for damages against a physician, based upon the insufficiency of the methods which he pursued in reaching and certifying a correct conclusion. In such an action it is open to the defendants to prove precisely what were the circumstances under which they acted, what inquiry, investigation, and examination they made, and what the

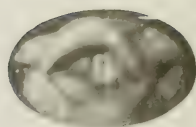
information was on which they proceeded. If such testimony did not go to the extent of a justification in case their certificate should be found to be false on the question of insanity, it was proper evidence to be considered in awarding damages. If physicians who have certified to the insanity of a person have not made the inquiry and examination which the statute requires, or if their evidence and certificate, in any respect of form or substance, is not sufficient to justify a commitment, the municipal officers should not commit, and, if they do it, it is their fault, and not that of the physicians, provided they have stated facts and opinions truly and have acted with due professional skill and care."

Nurses' Claims for Payment in Small-pox Cases.—A case reported in the last volume of the Law Reports of New Hampshire touches on the right of health officers to enforce the removal of patients suffering from contagious diseases to the special hospitals established for such cases, and the legal claim for services rendered under these circumstances. The case was that of several small-pox patients, members of one family, who were removed against their consent, and that of their parents, by the Health Board of the City of Manchester, to a pest-house provided for such diseases. The health officers employed a sister of the sick persons to care for them as a nurse, promising to pay a reasonable compensation. The law authorized the removal of small-pox patients to the pest-house, but did not in terms give the health board the power to bind the city for the payment of attendance by nurses. A bill was presented to the city authorities, and payment was refused, whereupon suit was brought and judgment recovered. On an appeal, the Supreme Court of the State affirmed the judgment and rendered the following interesting opinion on the law governing such cases: "Having power to compel the confinement of infected persons and prevent their communication with others, and having exercised this power, it became their duty to provide for the wants of those confined there. They could not shut them out from communication with their friends and with the world, and deprive them of any means of obtaining assistance, and at the same time lawfully withhold necessary support and care. They could not establish a hospital without ordinary hospital accommodations, and they could not make the hospital a place of involuntary confinement and escape the duty of supplying the reasonable wants of those who by confinement and seclusion were prevented from applying to any one else for relief. They could not furnish relief against the will of those confined, and afterward recover the expense from them or from those liable in law to support them. If the health officers were obliged by law to confine persons infected with dangerous diseases, and it was their duty to nurse and support them, and if they could not recover the reasonable expense from them or their guardians, they would be remediless unless they could charge the expense upon the city. The law does not require the performance of a duty and at the same time withhold the means reasonably necessary to its performance."

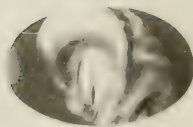
Baker Brown's Influence on Gynecology.—"It is not easy," said Sir Spencer Wells, in a recent lecture on "The Revival of Ovariectomy, and its Influence on Modern Surgery" (*"Medical Times and Gazette"*), "to estimate correctly the part played by Baker Brown in the progress of gynecology. In the minds of many, his really great services have been overshadowed by the errors of his later practice. Some who fully acknowledge and admire what he did to popularize the operations for the cure of ruptured perineum and vesico-vaginal fistula, and who now recognize the great success which attended his adoption afterward of John Clay's suggestion of dividing the pedicle of an ovarian tumor by the combined action of strong compression or crushing with the actual cautery, forget, or never knew, that when Brown assisted me in the case which I have just referred to, and in another which I am about to mention, his own early experience of ovariectomy had led him rather to oppose than encourage the repetition of the operation."

The New York Society of German Physicians.—We are requested to publish the following: "In future, no personal notifications of the meetings of the Society of German Physicians will be sent out. The meetings will continue to be held on the fourth Friday of each month, July and August excepted, at the residence of Dr. A. Jacobi, 110 West Thirty-fourth Street. Every German physician of good standing is invited to attend."

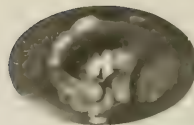
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NO. II.



NO. III.



NOS. I, II, III. NORMAL LARYNGES IN PHONATION.

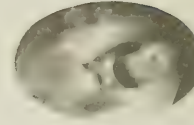
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NO. VI.



NOS. IV, V, VI. NORMAL LARYNGES IN RESPIRATION.

NO. VII.



NO. VIII.



NO. IX.



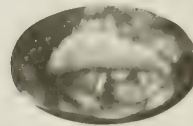
NOS. VII, VIII. CHRONIC CATARRHAL LARYNGITIS.

NO. IX. PARALYSIS OF THE ARYTENOIDEAN MUSCLE.

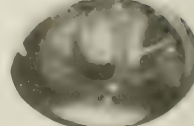
NO. X.



NO. XI.



NO. XII.



NO. X. SWOLLEN ARYTENOID IN LARYNGEAL PATHOSIS.

NO. XI. GROWTH OF POLYPUS IN LARYNX.

NO. XII. ENLARGED NASAL MUCOSA IN HYPERTROPHIC NASAL CATARRH.

ARTOTYPE REPRODUCTIONS OF PHOTOGRAPHS OF THE LARYNX AND POSTERIOR NARES.

Original Communications.

ON A PERFECTED METHOD OF
PHOTOGRAPHING THE LARYNX.*

By THOMAS R. FRENCH, M. D.,

LECTURER ON LARYNGOSCOPY AND DISEASES OF THE THROAT AT THE LONG ISLAND COLLEGE HOSPITAL MEDICAL SCHOOL; CONSULTING LARYNGOSCOPIC SURGEON TO ST. MARY'S HOSPITAL, BROOKLYN.

It is now more than two years ago that, with the assistance of Mr. George B. Brainerd, of Brooklyn, I made my first attempt to photograph the larynx of the living subject. The results obtained at that time were far from satisfactory, yet we were sufficiently encouraged to continue our experiments, and, though meeting at times with difficulties which seemed almost insurmountable, these experiments have finally been brought to a successful termination. Our object has been not only to obtain good photographs, but to devise an easy method by which any expert laryngoscopist can photograph the larynxes of his patients in every-day practice. This we have accomplished.

The assistance rendered by Mr. Brainerd has been invaluable. This gentleman, who is an extremely skillful amateur photographer, is a civil engineer by profession, and his interest in this work has been purely of a scientific character. He became interested in these experiments while under my care for the treatment of an acute affection of the larynx, nearly two years and a half ago. Having volunteered his services, he entered into the work with great enthusiasm, which has continued unabated until the present time.

Prior to the beginning of our experiments, though many had tried, all had failed to produce a good photograph of the larynx. Since then Mr. Lennox Browne and Mr. Emil Behnke, of London, have been successful in obtaining some excellent photographs of Mr. Behnke's larynx. In a paper on "Photography of the Larynx and Soft Palate," by Mr. Lennox Browne, read at the annual meeting of the British Medical Association, held in Liverpool, August, 1883, the writer says: "I do not anticipate that photography of the larynx can be extended beyond the boundary of physiology. To expect photographs from life of pathological conditions is plainly unreasonable, since those we have seen could only have been obtained by elaborate and costly machinery, and, above all, from a subject possessed of unusual, indeed, in my experience, of unequalled knowledge of what was our goal, and skill and endurance necessary for its attainment." I make this quotation to show how great were the difficulties which presented themselves to one who had been successful in obtaining some very good photographs of one subject.

Not only have we succeeded in devising a method for photographing the larynxes of those accustomed to the presence of the mirror in the fauces, but, as some of the photographs in Portfolio I will show, of those upon whom the laryngoscopic mirror was used for the first time, and

who were ignorant of the object of the procedure. Allowing that the fauces are moderately tolerant, with the method which I am about to describe there is, as a rule, no greater difficulty in obtaining photographs of pathological than of normal conditions.

Not only can the larynx be photographed, but it can be done with ease and without assistance. Five minutes are enough for the preparation and arrangement of the instruments, and in another five minutes from three to five exposures may be made; so that, after one has become familiar with this method, allowing that the instruments are ready for use, not more than five minutes will be needed to secure a good photograph of the larynx, which can afterward be developed and printed at leisure.

The obstacles encountered in bringing this method to its present state of perfection were both numerous and great. The first difficulty we met was with the camera. The stationary camera was found impracticable, for reasons which must be apparent to all. This difficulty was overcome by devising a small camera which could be held in the hand while the photograph was being taken. The next difficulty which presented itself was the source of illumination. Plain sunlight was not powerful enough; the oxy-hydrogen light did not give good results; the arc electric light used with the reflector was not satisfactory, and direct illumination with a modified "photophore électrique frontale" of Trouvé, of about twenty-candle power, was only strong enough to make a faint impression on the most sensitive plate. This difficulty was surmounted by a device for use with sunlight, which will be described hereafter. It being necessary, in order to obtain sufficiently large pictures for practical purposes, to place the lens of the camera close to the mouth of the subject, another difficulty was encountered in the condensation of the vapor of the breath upon the lens, and so obscuring or blotting out the impression.

This was overcome by placing a diaphragm in front of the lens, which not only prevented the lens from becoming fogged, but also increased its focal depth.

In order to illuminate and expose the entire larynx in the throat mirror, it was found necessary to use a mirror with a slight convex surface, the illumination being sufficiently strong to allow the loss of light occasioned by the dispersion of the rays from the convex mirror.

The minor difficulties encountered were too numerous to mention; suffice it to say that all have been overcome. About fifteen hundred exposures were made before satisfactory results were obtained.

The apparatus for photographing the larynx, which I now take pleasure in presenting to you, consists of (1) an instrument which I shall term a sunlight concentrator; (2) a camera with throat mirror attached; and (3) a perforated forehead reflector. The sunlight concentrator consists of a hollow truncated cone of metal, ten inches long, in the large end of which is a double convex lens five inches in diameter, which has a focal length of thirteen inches. At the outer end of a short movable tube, fitted into the small end of the cone, is a plano-concave lens of $1\frac{1}{2}$ inch

* Read before the Section of Laryngology, International Medical Congress, Copenhagen, August 16, 1884.

diameter, with its plane surface outward; this is placed an inch or so inside of the point of focus of the double convex lens, and in that position intercepts the converging rays and makes them parallel or divergent, according to its distance from the first lens. With this device a powerful light is obtained, and that, too, without material heat. The cone is mounted on a rod by means of a universal joint, the rod being fastened to the frame of a window into which the sun shines.

The camera (Fig. 1) consists of a box $10\frac{1}{2}$ inches long, $1\frac{1}{4}$ inch wide, and $\frac{3}{4}$ of an inch in thickness. The back opens upon hinges, and allows the introduction of the ground glass or plate-holder. The plate-holder is long enough to admit of five pictures being taken. On the front face of the camera a telescopic tube $3\frac{1}{4}$ inches long, when

run out to its full extent, is attached, and at the outer end of this tube the lens is placed. The lens is made up of two achromatic meniscus lenses of one half-inch diameter, and has a focal length for parallel rays of $1\frac{1}{8}$ inch. In the front part of the camera is a narrow compartment in which slides a drop-shutter of hard rubber. The shutter is released by means of a key on the front face of the camera. At the side of the tube holding the lens is a hollow handle of brass, into which the shank of the throat mirror is passed and fixed by a thumb-screw. The shank is attached to the right side of the frame holding the mirror. The object of this is, mainly, to allow of the lens being held opposite any part

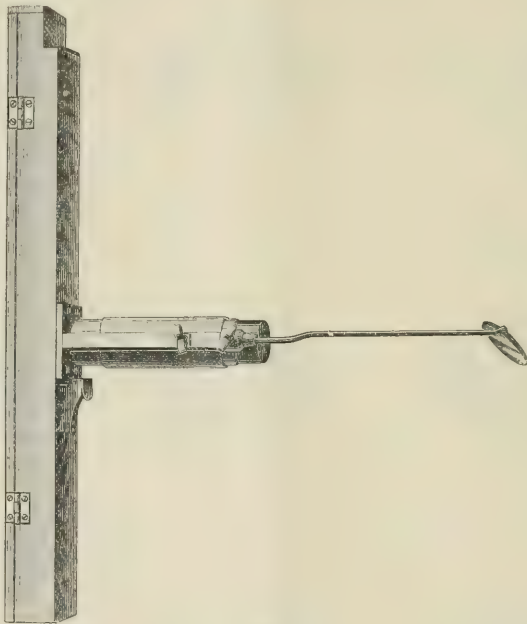


FIG. 1.

of the opening of the mouth. I have already stated that the mirrors used are slightly convex, the radii of their spherical surfaces varying from twelve to twenty-four inches, twelve inches radius being as small as can be used without danger of distortion.

The manner in which the apparatus is used in taking photographs of the larynx is as follows:

I have here a sketch (Fig. 2 shows sketch reduced) which will, perhaps, aid you in understanding the description. A concave reflector attached to a head-band is so arranged over the left eye that the beam of sunlight will be received upon it and thrown into the mouth of the subject. It is important that the beam of light should be thrown from the inner side of the reflector, that nearest the nose, for in this way the angle between the reflected beam and

the axis of the lens is reduced to a minimum. As a rule, the tongue must be protruded and held well out between the thumb and forefinger of the subject's right hand, though in exceptional cases the tongue may be allowed to remain in the mouth. The throat mirror with camera attached, held in the right hand of the observer, is now placed in position in the fauces. *The mirror and light should be so adjusted that with the observer's left eye only the central portion and left side of the larynx can be seen, and be seen to be well illuminated.*

On account of the parallax, or displacement of the image, due to the difference in points of view between the eye and lens, some skill is necessary in managing the illumination and camera, so that the parts which it is desired to bring out will be exposed to the lens if not to the eye. The

image as seen by the eye is not exactly the same as that exposed to the lens. Allowance must therefore be made for this fact, the mirror being held in such a position in the fauces that a straight picture will be insured.

If, now, the tongue does not mound up above the level of the lower edge of the lens and the lower edge of the mirror, it may be taken for granted that, when the plate is exposed, the picture received upon it will be nearly the same as that seen with the left eye in the throat mirror. The plate is exposed by pressing upon the key with the index-finger; this releases the shutter, which in falling makes an instantaneous exposure, amounting, perhaps, to one sixth of a second.

Some of the results obtained with the method just described are contained in these portfolios.* The original photographs are of about one third the size of the larynx. Enlargements will be found opposite most of them, though the originals are very clear and distinct. Portfolio 1 contains forty-one photographic pictures of normal and diseased larynges of twenty-four subjects, and three photographs of the posterior nares of one subject.† In the laryngeal photo-

* Two portfolios were exhibited at the meeting at which this paper was read. A few of the photographs contained in Portfolio 1 have been reproduced, by the artotype process, by Mr. Edward Bierstadt, of New York, and will be found in a plate facing this article. The photographs contained in Portfolio 2 have not been reproduced, but they probably will be very soon.

† All of the photographs of the posterior nares show one or the

graphs the positions occupied by the various structures in phonation, inspiration, and expiration are clearly shown. In many of the photographic pictures the rings of the trachea are shown, and in one photograph even the bifurcation of the trachea can be seen. The diseases shown are: chronic catarrhal laryngitis; chronic laryngitis with hypertrophy of the mucous membrane; paralysis of the arytenoid muscle; swelling of the tissues overlying the arytenoid cartilages in laryngeal phthisis; and papillomatous growths in the larynx.

Portfolio 2 contains four series of photographs, showing the positions of the various structures of the larynx in the production of tones in the different classes of voice. Extremely high and extremely low notes are not shown, but all of the registers of the human voice are represented. The first series shows the positions of the various parts in the production of each note in the soprano voice, from C, treble clef, first line below staff, to A, treble clef, first line above staff, while the tongue was in its natural position in the mouth, as well as while it was protruded. The second series shows the positions of the laryngeal structures in each note of the contralto voice, from D, bass clef, third line, to A, treble clef, first line above staff, also while the tongue was not protruded, as well as while it was held out.

In some of the photographs of the third series more or less mucus is to be seen in the chink of the glottis. This is accounted for by the fact that the subject was suffering from a mild attack of acute laryngitis at the time the photographs were taken. As the photographs were obtained at the last moment, the exhibition of this condition could not be well avoided. This series shows the positions of the various structures of the larynx in the production of each other of the pharyngeal orifices of the Eustachian tubes. In the past few weeks the author has succeeded in photographing the membrana tympani.

note of the tenor voice, from C, bass clef, second space, to A, treble clef, second space, while the tongue was held out. The fourth series shows the positions of the structures of the larynx in the production of each note of the bass voice, from E, bass clef, first line below staff, to C, bass clef, first line above staff, while the tongue was protruded.

It would be inappropriate, neither is it my intention, in this paper, to discuss the conditions which exist in the singing voice. I desire, however, to call your attention to several noticeable features to be observed in these photographs. In all of the series it will be seen that the epiglottis is not shown to be gradually raised as the voice ascends the scale.

It is generally conceded that, all other conditions being the same, the higher the note sounded, the higher the epiglottis will rise. The position of the epiglottis is dependent, largely, upon the position of the tongue, and the position of the tongue varies according to the vowel sounded.

While obtaining these photographs, great pains were taken to secure the production of the same sound, the vowel *e* being used in all upper notes, but, as the results prove, in a few instances I was not entirely successful. So you will observe that in some of the low notes in the series the epiglottis is shown to be as high as in notes an octave above. This, I repeat, must be attributed to the fact that the sub-

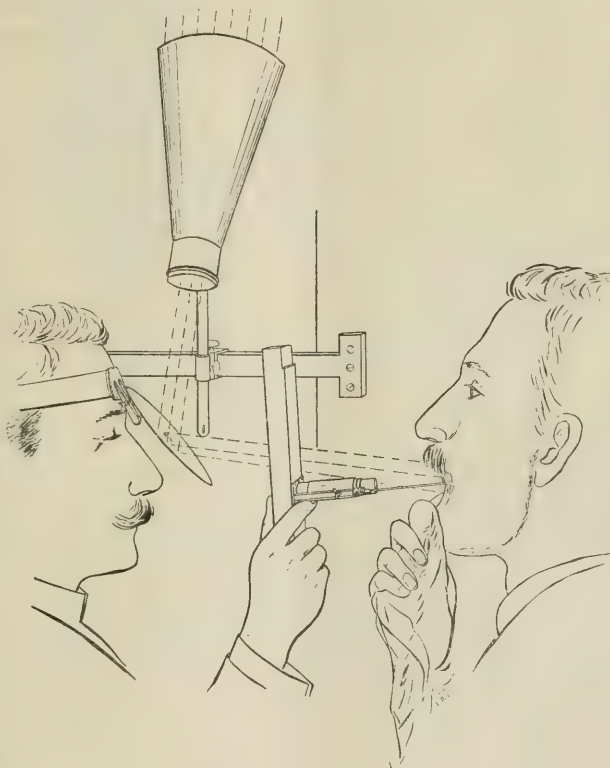


FIG. 2.

ject was not successful in sounding the same vowel in each note. Had my subjects been practiced beforehand, better results might have been obtained in this particular. There is, however, no doubt about the accuracy of the positions of the vocal bands as represented.

Again, it will be observed that there is very little difference in the positions of the structures of the larynx, whether the tongue was held out or remained in the mouth. In all of the series the vocal bands can be seen to be shorter, wider, and less closely approximated in the lower than in the upper notes, becoming gradually narrower and longer

as the voice ascends the scale. In the lower notes of the soprano voice the chink of the glottis is widest in its posterior part, but becomes linear at about B, treble clef, third line, and continues so throughout the upper portion of the range. In the contralto voice the chink is wider than in the soprano. It will also be observed that throughout the entire range the chink is widest between the posterior vocal processes, the aperture being wider in the lower than in the upper notes. That this aperture is present in other contralto voices is shown by a photograph of another larynx, in the production of a note in the contralto voice, to be found in Portfolio 1.

In the lower notes of the tenor series the chink of the glottis is widest in its posterior part. At about B, bass clef, first space above staff, it becomes linear, and continues so to G, treble clef, first line, in which note, as well as the one above it, the falsetto mechanism may be seen to have begun. In the photograph representing the lowest note of the bass series a triangular aperture exists between the posterior vocal processes. This soon becomes elliptical in shape, and, gradually diminishing, has nearly, though not quite, disappeared in the photograph representing the highest note of the range, C, bass clef, first line above staff.

While these series of photographs of the singing voice must prove of interest, and probably of value, I do not offer them as proving conclusively the positions always occupied in the production of tones in the different classes of voice, for they are of only one individual of each class. Before they can be accepted they must be verified by other series of a similar character, but this, unfortunately, I have omitted to do, not having had sufficient time.

None of the photographs taken in any of our experiments have been retouched, even in the slightest degree.

While satisfactory photographs may, as a rule, be obtained at the first sitting, two sittings are sometimes required. In the first the focus is to be found. In the second, the focus being known, if all the other conditions are fulfilled, we can feel quite certain of obtaining as many good pictures as are desired.

Now let me explain to you the manner in which the focus of any subject is found. The distance from the position occupied by the mirror in the fauces to the vocal bands varies markedly in males and females, and to a less extent in individuals of the same sex. Without going into details as to the manner in which the method of focusing was arrived at, I will only state that, as a matter of fact, with this instrument, with the throat mirror eight inches from the front face of the camera, in men, with the tongue in or out, the lens must occupy a position of from $2\frac{3}{8}$ of an inch to $2\frac{3}{4}$ of an inch from the face of the camera. In women, from $2\frac{3}{8}$ of an inch to $2\frac{3}{4}$ of an inch from the face of the camera. The difference in the focus, whether the tongue is protruded or not, is about $\frac{1}{8}$ of an inch.

These figures being known, in order to find the exact focus, three exposures should be made, varying the position of the lens $\frac{1}{8}$ of an inch within the limits indicated above. By following these directions, one or more pictures of the larynx or trachea, in good focus, can almost invariably be obtained in three exposures.

If, in taking several photographs of the larynx, care be exercised to vary the position of the mirror slightly, pictures may be obtained which, when viewed with the stereoscope, will present an appearance of greater depth of the cavity of the larynx than can be obtained in any other way.

I am confident that the method of photographing the larynx described in this paper is one of practical utility, and must prove of great service in facilitating the study of the functions and diseases of the larynx.

A NEW APPARATUS FOR TRANSFUSION, WITH REMARKS ON THE INTRA-VASCULAR INJECTION OF BLOOD AND OTHER FLUIDS.*

By JOSEPH C. HUTCHISON, M. D., LL. D.,
BROOKLYN.

NOTWITHSTANDING the operation of transfusion of blood has been practiced for more than five hundred years, and many brilliant illustrations of its value in saving human life have been noted, it must be reluctantly admitted that it has not fulfilled its early promise, and is now resorted to much less frequently than formerly. Within a few months, however, the prevalence of cholera abroad, and the expectation that it will soon revisit this country, have invested the subject of transfusion of blood and other fluids with new interest, especially since many reports of success have been recently recorded in Europe and America.

The writer has for a long time believed that transfusion would be more frequently practiced, and take a higher rank as a therapeutic expedient, if the means for performing the operation were simplified, its dangers diminished, and a proper and easily obtainable fluid could be found for the purpose.

The object of this paper is to consider these requirements.

DESCRIPTION OF THE APPARATUS.—The apparatus which I now exhibit consists of a cylindrical glass receiver, graduated into inches, with a capacity of twelve ounces. It may be made larger if desirable. A metal cap, containing a perforated female screw, is attached to its lower end, having a perforated nipple-shaped termination, to which a rubber tube four feet long is connected, in order to convey the liquid from the receiver to the cannula which enters the blood-vessel. The mouth of the receiver is closed by a rubber stopper, which prevents the escape of heat, and is perforated in the center to admit a thermometer, which fits the opening tightly. When not in use, the thermometer is pushed well down into the receiver, to prevent it from being broken in handling. The cannula has a nipple-shaped end, which is to be slipped into the distal end of the rubber tube, and is furnished with a stop-cock.

The receiver is surrounded by a double jacket of India-rubber, the walls of which are separated by a half-inch space for holding hot water. The water is introduced into the jacket through a tube projecting from the top, fitted with a nipple-end stop-cock. An opening at the top of the jacket admits the receiver, and a smaller one at the bottom

* Read before the New York State Medical Association, November 18, 1884.

allows the metal cap to protrude; it has a narrow opening extending two thirds of its length, to allow the operator to see the graduated marks on the receiver, and also a loop on the top for suspending the apparatus when in use.

METHOD OF USING THE APPARATUS.—

Drop the end of the rubber tube, to which the male screw belonging to the lower end of the receiver has been attached, into a vessel of hot water (150° to 200° F.) placed three or four feet above the patient, and attach the other end of the tube to the stop-cock at the top of the jacket, the receiver having been previously put inside the jacket, because it can not be introduced after the jacket has been filled. Now compress the jacket with the hands to expel the air, which will be seen to rise in bubbles through the water; then remove the compression, and, placing the jacket lower than the surface of the water, a siphon is established, which fills it almost immediately. The jacket, when distended, holds ten ounces, and hugs the receiver closely, so that no air can get between them, which would prevent the heat from being imparted to the receiver. This method of filling the jacket is most convenient and rapid, and a larger amount of water can in this way be introduced than by pouring it into the opening at the top. In the box with the apparatus are three or four bottles containing the salts which are to be injected, mixed in due proportion, ready for solution, with the formula on the labels.

The rubber tube is now detached from the stop-cock at the top of the jacket, and is attached to the cannula; and the other end of the tube is connected with the lower end of the receiver. The apparatus is warmed by filling it with hot water, which is allowed to run off before it is filled with the fluid which is to be injected. The receiver is then closed with the rubber stopper carrying the thermometer, and the apparatus is suspended or held, by an assistant, three or four feet above the vein which is to be opened.

The vein is exposed by lifting a fold of skin transversely across it and dividing it with scissors or a bistoury, making the incision about three fourths of an inch long. A probe is carried behind the vein, which is then picked up with forceps and opened, by a V-incision, with a delicate pair of scissors. Before doing this the stop-cock of the cannula

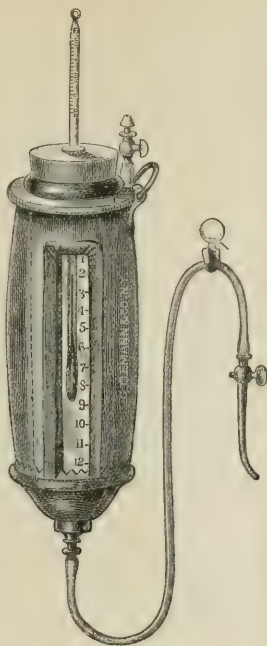
should be opened and a small quantity of fluid allowed to escape, for the purpose of carrying off the bubbles of air which may have adhered to the walls of the tube. The rapidity with which the fluid is introduced can be regulated by the stop-cock in the cannula. After the cannula is introduced it is fixed in position by the finger laid over the opening in the vein; no ligature is necessary to retain it in position.

A vein at the bend of the arm is usually selected for the operation, a bandage having been previously applied above the elbow, as in phlebotomy, to distend the veins; but, when there is difficulty in finding a vein in this locality, a saphena near the outer ankle may be selected, or the fluid may be introduced into the radial artery, as recommended by Hunter, and recently practiced by Halsted. The central end of the artery should be selected.*

A number of appliances have been devised for the purpose of simplifying the operation of transfusion, and for preventing the entrance of air into the blood-vessels; these results can be best obtained by a simple apparatus, constructed on the principle of the one I have exhibited. If the operation is managed with ordinary care it is impossible for air to enter the vein. The special advantage which this apparatus has is the hot-water jacket. It is a convenient expedient for preventing the fluid to be transfused from becoming cooled below the temperature of the blood during the operation. It is important that the injection should not enter the blood below 98.5° F., and there is no objection to a temperature of 105° F. The temperature can be accurately regulated by the thermometer.

TRANSFUSION OF BLOOD.—It was believed until recently that the reviving power of blood resided in the corpuscles, that transfusion, when performed with the serum alone, or with any other fluid, would prove fruitless. Recently, however, Ott and other observers have demonstrated, by repeated experiments on the lower animals, that the corpuscles of transfused blood, pure or defibrinated, are short-lived and rapidly excreted; that the blood corpuscle is not the important element; that the indication is to restore activity to the circulation by restoring the bulk of the vital fluid so as to enable the organs, especially the heart and brain, to perform their functions duly; that, for these and other reasons, blood is not so good as saline solutions for transfusion in acute anæmia. Other objections are the difficulty of obtaining blood at a moment's notice; the danger that minute masses of fibrin, even when defibrinated blood is used, may obstruct the vessels of the brain, lungs, and liver, and cause fatal disorders; the difficulties attending the operation; the liability of the donor to faint and thus arrest the operation, and also to suffer from phlebitis or other serious consequences. These considerations have prevented the operation from being frequently performed, although the indications for it are by no means rare. In the only case in which I have practiced blood transfusion (Aveling's method was used), the donor, a house physician, fainted, the flow of blood was arrested, and the operation suspended; he developed phlegmonous inflammation and

* "Med. Record," January 5, 1884.



septicæmia, and narrowly escaped with his life. During the operation, air entered the vein of the recipient, but no unfavorable symptoms resulted.*

TRANSFUSION OF THE BLOOD OF THE LOWER ANIMALS.—Blood of the inferior animals, whose corpuscles are not larger than those of man, has been, for a long time, used for transfusion when human blood was not available, and several successful cases have been reported. It is said to be free from any special danger to a healthy human life, and the blood to be more easily obtained than that of man. The exact contrary would be nearer the truth, for in cities lambs and calves are much less numerous than men.

Hasse and Ponfick have found, by experiments on the lower animals, that this operation is not infrequently followed by acute nephritis, suppression of urine, hæmaturia, and uræmic symptoms which, when severe, terminate fatally.

Post-mortem examinations showed that "both kidneys are always greatly swollen; large portions of the straight convoluted tubuli are found blocked up by granular and blood-stained casts, a variable number of which may be detected in the scanty and sanguinolent urine." The appearances and the antecedent symptoms lead to the conclusion that transfusion of blood from an animal of a different species will often imperil life, if it does not lead to a fatal issue.

Ponfick also made the interesting observation that blood taken from an animal of the same species was not followed by grave symptoms, but that the globules of the donor rapidly underwent dissolution in the serum of the individual receiving them, whether man or animal.

TRANSFUSION OF MILK.—The intra-venous injection of milk was first suggested by Dr. E. M. Hoader, of Toronto, Canada, in 1850. He employed it in three cases in the collapsed stage of epidemic cholera; one patient died and two recovered. The operation was revived in 1873 by Dr. J. W. Howe, of New York, who injected milk into the veins of seven dogs, and all died promptly.† He concludes that the milk killed them. He also injected two patients, both of whom died. Professor T. G. Thomas thinks that these deaths occurred because the milk was not fresh. Dr. Thomas has reported seven cases of intra-venous injection of milk, with four complete recoveries,‡ and several successful cases have been reported by Dr. Brinton and Dr. Hunter, of Philadelphia.

I have practiced intra-venous injections of milk three times, with one recovery—on one patient twice. This case was one of pernicious anæmia in a laboring man of large physique.

It was the same case, already referred to, in which I attempted immediate transfusion of blood with Aveling's apparatus, but failed on account of syncope of the donor. One week subsequently five ounces of milk, fresh from the cow, were introduced into the median cephalic vein, by means of a funnel and rubber tube. I did not see the pa-

tient again until three weeks after the operation. His appetite had returned, his pulse was quite full and strong, and his lips and face had considerable color. His appearance had so much improved that at first I failed to recognize him. (See "Med. and Surg. Reporter," March 15, 1879.) Three months subsequently he entered the Brooklyn Hospital in the same anæmic condition as before the last operation. Five ounces of milk were again injected into a vein near the ankle, with Colin's apparatus. This operation did not improve his condition, and he died from exhaustion one week afterward.

Notwithstanding the excellent results that have sometimes followed the intra-venous injection of milk, the operation, it is said, is not free from danger; and it is stated by Laborde that, if animals do not die when milk is injected into the veins, it is because only a small quantity has been used, and even such quantities may occasion serious accidents. The "Lancet" (Feb. 2, 1884) contains an editorial on the results of a series of experiments, reported by Dr. Migliopanza in the "Archives italiennes de biologie," in which he injected milk into the veins of dogs. This observer concludes that milk must first be digested to be properly prepared for the blood; if injected as milk, it simply gives up its fat globules and casein to the kidneys, and passes out of the body by the urine. Milk in the blood in notable quantity, before it has undergone the digestive process, is unassimilable and hurtful, producing vomiting, diarrhæa, prostration, and ultimately death. The butyric element of the milk transfused without previous digestion produces fatty infiltration of the kidneys and chyluria. The sudden introduction of large quantities of milk into the circulation produces great diminution of blood-pressure, due to the collapse of the force of the cardiac systole, and, unless the milk is filtered, to prevent corpuscles larger than those of the blood from entering, obstruction may occur in the pulmonary and cerebral circulation. Albertoni has proposed the injection of the serum of milk, and has actually injected from ninety to one hundred grammes into the veins of dogs without observing any ill effects. Casein introduced into the blood, after being digested, is transformed into urea rather than into food for the tissues.

From all this it is concluded that the fat and casein of milk transfused into the blood before being digested represent an unassimilable material which is discharged from the organism.

SALINE INJECTIONS INTO THE VEINS.—The intra-venous injection of saline solutions was extensively practiced during the cholera epidemic of 1832-'33. More recently this matter has received considerable attention, especially by the Germans; and they have proved, by numerous experiments on animals bled to syncope, that life can be restored by injecting saline solutions into their veins, and that they are even to be preferred to blood for that purpose. Ott injected dogs with pure and defibrinated blood, blood serum, and saline solutions, and found "that the danger from loss of blood, even to two thirds of its whole volume, lies in the disturbed relationship between the caliber of the vessels and the quantity of blood contained therein, not in the dimin-

* Reported in the "Med. and Surg. Reporter," March 15, 1879, by A. T. Bristow, M. D.

† "Med. Record," vol. xiv, p. 443.

‡ "New York Med. Journal," May, 1878.

ished number of red blood corpuscles; and that this danger concerns the volume of the injected fluids also, it being a matter of indifference whether they be albuminous or contain blood corpuscles or not, so long as they are not directly injurious." He proves, further, that the hydræmia arising from saline solutions, though greater than that from blood-transfusion, persists for a shorter time; and that the regeneration of the blood corpuscles, after transfusion of blood, requires more than double the time required after the saline injection. The soluble or corpuscular elements that may be introduced into the vascular system undergo disintegration and excretion, and, since those processes go on more slowly with all other fluids than with the salt solution, it follows that the *restitutio in integrum*, after the injection of the salt solution, takes place more quickly than after transfusion of blood. Since, moreover, there is no danger of the introduction of fibrin-ferment, and the solution is easily prepared, and the technique of the operation very simple, he recommends it in place of transfusion of blood in the human subject, in whom so great a loss of blood as two thirds of its quantity is hardly to be observed.*

Schwarz has also proved, by a series of saline injections into the veins of animals bled to syncope, that the useful element in transfusion is not the blood corpuscle, which is short-lived and rapidly excreted, but the re-establishment of vascular tension and the resulting energetic contractions of the heart. His observations led him to the conclusion that injections of saline solutions were preferable to blood-transfusion in acute anæmia. Schwarz's solution consists of chloride of sodium, 3 jss.; liq. sodæ, gtt. ij.; distilled water, $\frac{3}{4}$ xxxij, warmed to 100° to 104° F.

Jennings, in his recent essay ("On Transfusion," London, 1883), says: "The explanation of the success usually consequent on the intra-venous injection of fluid lies in this, that it is the *dynamic*, rather than the nutritive, value of transfusion which is serviceable in the class of cases under consideration; and, under conditions which have been indicated, and which embrace *most* of the instances where transfusion is called for, I unhesitatingly advise the intra-venous injection of fluid as being certain in its action, comparatively free from danger, and not requiring any special skill, if carried out in accordance with the directions which have been given. If, however, a few ounces of human blood can be safely and readily obtained (*which is exceptional*), it is obvious that the nutritive *quality* of the saline injection will be much enhanced by the admixture of the blood with it, particularly if that blood can be transfused by an immediate method; but this advantage is *generally* a secondary consideration, and it is only in some *rare* cases, such as carbolic-acid poisoning and some of the varieties of chronic anæmia, where, if transfusion be indicated, the transfusion of blood is indispensable." Jennings's solution consists of chloride of sodium, 50 grs.; chloride of potassium, 3 grs.; sulphate of sodium, 2½ grs.; carbonate of sodium, 2½ grs.; phosphate of sodium (Na_2PO_4), 2 grs., dissolved in 20 ounces of water at 100° F., with the addition of 2 drachms

of absolute alcohol, to be injected by means of a siphon of rubber tubing.

Dr. W. T. Bull, of New York, in an important paper (*l. c.*), has tabulated nineteen cases reported within three years, giving the essential details, in which intra-venous injections of salt solutions were used; thirteen were cases of acute anæmia, three were cases of collapse from illuminating gas, and one of collapse from iodoform poisoning.

Quite recently, Professor Mikulicz, of Cracow, in the case of a young man whose life was imperiled by loss of blood from a wound of the brachial artery, injected into the median basilic vein twenty ounces of a saline solution composed of one part of carbonate of sodium, six parts of common salt, and one thousand parts of distilled or twice-boiled water, warmed in a bottle to the temperature of 104°. Dr. Fux, of Laibach, also records the case of a youth who was profoundly anæmic in consequence of repeated hæmorrhages from a wound in the hand, but was prepared for successful operation upon the injured member by an intra-venous injection of eight ounces and a half of a salt solution. I have not had the opportunity of reading the original reports of these cases, but they are given on the high authority of the Philadelphia "Medical News" for September 20, 1884.

My personal experience with saline injections is limited to its use in five cases of epidemic cholera in 1854. The good effects were temporary, but it should be stated that all these cases had been for some time in extreme collapse, moribund indeed, so that the value of the treatment was not fairly tested. I was, however, convinced that a treatment which produced such marvelous temporary effects—such as arousing the patient from profound lethargy, restoring the activity of the circulation as well as warmth and color to the skin, and re-establishing intelligence and speech—would yet prove of great value in such cases, and in cases of acute anæmia from hæmorrhage.

There are many nice points connected with the operation which can only be settled by experiment, such as the best method of introducing the liquid, the proper composition, temperature, specific gravity, quantity, and the rapidity with which it should be introduced. In two cases I injected a fluid composed of common salt, 3 iij, and alcohol, 3 j, in one pint of water, of which two pints were introduced into the median basilic vein, at a temperature varying from 100° to 110° F., and repeated the operation when the algid symptoms reappeared. The following solution, recommended by Dr. Gull in the "Reports on Epidemic Cholera to the Royal College of Physicians," London, 1854, was used in three cases:

Chloride of sodium.....	60 parts by weight;
Chloride of potassium.....	6 " " "
Phosphate of sodium.....	3 " " "
Carbonate of sodium.....	2-13 " " "

"By dissolving one hundred and forty grains of this salt in forty ounces of distilled water, and filtering, we obtain a fluid having a decidedly saline taste, a faintly acid reaction, and nearly approximative in its composition to the fluid effused, minus the organic substances. These are small in amount, and their loss has apparently no important influence on the constitution of the blood."

* Hacker, "Wiener med. Wochenschrift," 1883, No. 37; quoted by Bull, "Med Record," January 5, 1884.

To introduce the fluid into the veins, I used a glass funnel connected with a glass tube three feet long, to which a cannula was attached, raised three feet above the patient's arm.

Dr. Gull's formula is, based upon data by Carl Schmidt of the analysis of healthy blood, as follows:

Soluble Salts in 1,000 Parts of the Water of the Liquor Sanguinis in Health.

Chloride of sodium.....	5.72;
Chloride of potassium.....	.627;
Phosphate of sodium.....	.367;
Sulphate of sodium.....	.176;
Carbonate of sodium.....	2.13 = 9.02.

In Dr. Gull's formula the sulphate of sodium is strangely omitted. A more accurate formula (the one which I recommend), deduced from Schmidt's analysis, is the following:

Chloride of sodium.....	60 grains;
Chloride of potassium.....	6 "
Phosphate of sodium.....	3 "
Sulphate of sodium.....	1.5 "
Carbonate of sodium.....	20 "

Dissolve one powder in 24 ounces of water at 100.5° F. The fluid should enter the vein at a rate not exceeding one ounce per minute, and this can be accurately regulated by means of the stop-cock in the cannula. The quantity of fluid to be injected, if a saline solution is used, is from 12 to 24 ounces. The injection may be stopped when the pulse becomes stronger and the temperature of the peripheral parts of the body more normal.

The arterial injection of fluids has, within a few years, been strongly advocated by Heuter and others, and Halsted, of New York, has reported three successful cases, and favors central arterial transfusion in all cases where the operation is indicated.* The advantages claimed for arterial over venous injections are: (1) air or small clots, accidentally introduced into the blood, are caught and retained in the capillaries and do no harm; (2) there is less danger of overpowering the heart by a too rapid introduction of the fluid; and (3) it is often easier to find an artery, the radial, than a suitable vein; this advantage at least must be conceded.

CASES IN WHICH TRANSFUSION IS INDICATED.—This includes all cases of acute anæmia produced by sudden and copious loss of blood in which life is imperiled; a favorable result may be expected in such cases in a person previously healthy. It is a classical operation, so to speak, in *puerperal hæmorrhage* occurring during or after delivery, and should be practiced not merely to prevent immediate death, but also to avert the danger of blood-poisoning which so often follows the copious loss of blood.

In *hæmorrhage from large vessels*, as well as in *wounds of small vessels*, where the hæmorrhage is only moderate and yet is sufficient to prevent the reaction requisite to enable the surgeon to perform a necessary operation, it is a valuable expedient.

In *hæmorrhage from the bowels and stomach* it is contra-indicated, except as a *dernier ressort*, because of the danger of exciting another hæmorrhage by dislodgment of a throm-

bus; but it may be used in such cases, for the anæmia which follows, several days after the hæmorrhage has ceased.

In *hæmophilia* there is danger of aggravating the hæmorrhage by increasing the force of the heart's action, and there is danger, also, of fresh hæmorrhage from the wound inflicted in the operation. It may be used, however, as a last resource to save life, and Lane has reported such a case, with recovery, in the "Lancet," vol. xvii, p. 185. In *purpura hæmorrhagica* it does not promise much, since it can not lessen the danger of new hæmorrhages.

In *excessive and persistent vomiting*, threatening life, whether produced by the use of ether as an anæsthetic, or by other causes, it may prove of great value. In *epidemic cholera* it should be more generally used, as well as in *acute diarrhæa and dysentery*, and some of the *low forms of fever*, threatening speedy dissolution. It may often be employed with advantage in *chronic surgical anæmia* produced by long-continued suppuration and loss of reparative power. The patient may be brought by transfusion to a favorable condition for operation followed by recovery. Such a case is reported by Barwell in the "Lancet," April 21, 1877. Halsted has reported ("New York Med. Jour.," December 8, 1883) a case of *septicæmia* from suppurative disease of the ankle and tarsal bones in which depletory transfusion was practiced, which so improved the patient as to permit amputation of the leg, with recovery. In *opium-poisoning* transfusion may produce favorable results, especially if depletory withdrawal of blood from one vein was taking place simultaneously with the injection of a proper fluid into another vein. The poison would be eliminated, and the fluid remaining in the body would be more diluted, and therefore contain a less injurious solution of morphine. In the collapse from illuminating-gas poisoning it has recently proved efficient in the hands of Garrigues, Bull, and Halsted, of New York. In such cases, also, depletory transfusion should be practiced. The operation can not be considered dangerous or reckless, for it has often been successfully performed, and followed by recovery, under the most adverse circumstances. It should not be resorted to as a last and desperate remedy. If it is delayed until the patient is moribund, the functions of the venous and circulatory systems may be so far impaired that recovery is impossible, and a temporary improvement is almost certainly followed by a speedy and fatal relapse. It is contra-indicated when there is organic disease of the circulatory organs (Quain).

The matter presented in the preceding pages seems to the writer to justify the following conclusions:

1. It appears to be proved, by experiments upon animals and by clinical facts, that corpuscles of transfused blood are short-lived and rapidly excreted; that the reviving power of blood does not reside in the red corpuscles, and hence the danger of excessive loss of blood is not due to the diminution of its corpuscles and other solid constituents.

2. The important element in transfusion is the restoration of the vital fluid to the vascular system, increasing vascular tension, and causing energetic contractions of the heart.

3. The intra-venous injection of salt solutions in appropriate cases is a more simple and a safer operation than

* "New York Med. Jour.," December 8, 1883.

transfusion of blood. It can be done without the aid of a skilled assistant, and the materials for injection are easily obtained.

4. If further experience should confirm the favorable results from intra-venous injections that have been recently reported at home and abroad, the operation deserves to be held in the highest esteem, and is destined to occupy an important position among therapeutic agents.

DESTRUCTIVE ADENOMA OF THE PETROUS PORTION OF THE TEMPORAL BONE, INVOLVING THE ORGAN OF HEARING.

By SAMUEL SEXTON, M. D.,

AURAL SURGEON TO THE NEW YORK EYE AND EAR INFIRMARY.

THE patient, G. W. R., a native of New York, was forty-three years of age when he first came to the New York Ear Dispensary for treatment.

The more interesting points in his history were as follows: At the age of ten, he alleges, he was subject to Saint Vitus's dance. From the age of fourteen to twenty-four he was a sailor, and frequently received blows upon the head, but none of surgical importance are remembered. He was, however, during this period of time, subject to dizzy spells, and sometimes received falls, even falling overboard. When twenty-five years old he was married, and afterward engaged in labor on shore. His wife states that during the year previous to their marriage his health seemed to be perfectly good, but that two weeks after this event he suddenly became ill with some head trouble, and coincidentally it was noticed that *when he laughed the face was drawn to the left side, his speech was imperfect, and deglutition gave rise to strangling*—symptoms from which he never afterward recovered.

During the next two years, the particulars of the case not being remembered by the patient nor by his wife, some abatement took place in the symptoms, but at the end of this period another attack occurred, accompanied by vertigo and followed by marked exhaustion. The patient had a severe cold in the head at this time, which gave rise to *deafness and tinnitus aurium in the right ear*, which became permanent.

During the two succeeding years (1860-'61) vertiginous attacks similar to the foregoing occurred frequently, and increased in severity; they were characterized by dizziness, pallor, coldness of the body, and profuse sweating. There was stupor, and unconsciousness even, lasting for an hour, more or less, followed by prostration, dizziness, and intellectual confusion; these were often brought on by over-exertion or excitement. The "heaviness in the head" which had long been experienced now increased; there was much mental depression and nervousness; he "could not work half of the time." Deafness of the right ear was marked. The general condition was very bad. He was treated for "a rush of blood to the head."

The next four years (1862 to 1865) the state of the patient's health varied; at times he could work, but toward the end of this period he began to break down more decidedly; he would come home after driving a trip on the horse-railroad, where he was employed, completely exhausted, and go to bed and sleep three or four hours, and then, after eating a hearty meal, "feel refreshed for the rest of the day."

In 1866 another intercurrent catarrhal inflammation of the middle ear occurred along with *severe pains* in the right ear, interrupting rest and causing much exhaustion. A discharge followed this attack, as on previous occasions, and continued off

and on for a time. The local employment of laudanum and sweet oil was recommended by a physician for the relief of these symptoms. A *severe cough* now began, from which he never afterward recovered, and the pains in the head became constant; he could not sit up without experiencing vertigo, in standing or attempting to walk he was obliged to hold on to some object for support, and on one occasion he fell down in the street and became unconscious.

The history for 1867 to 1869 is wanting, but in 1870 another intercurrent attack of catarrhal inflammation of the middle ear occurred, lasting this time for ten days, and succeeded by vertiginous phenomena.

In the summer of 1871 a free discharge having an offensive odor was established, and he was *laid up for three weeks with a large "gathering on the back of the neck"* (probably in the mastoid region).

In the beginning of 1872 he felt much better again, the improvement in general health continuing during the year; he seldom referred to the head trouble; there was an increase in weight, and his disposition became more cheerful. He would, however, *fall asleep very quickly whenever he sat down*. He managed to attend to light employment now by sleeping for a short time daily. He thinks his vision was now failing.

In April, 1873, severe pains in the head were again experienced, and dry cups were applied for a pain in the side. In June he was taken down with some pulmonary trouble, the cough became very severe, and for a week muco-purulent matter was expectorated, the odor of which was unbearable. He got up from this attack in a few weeks, but the head symptoms became worse, and, mental depression increasing, *he took to drink*. Even in this state he worked some until mid-winter, but his interest in everything was rapidly lessening, a state of inertness and constant drowsiness ensued, and he often expressed a desire to die. Vision continuing to fail, spectacles were used.

In July, 1874, there was another rally, and he found employment as a horse-car driver until February, 1875, when he contracted a severe cold, and had earache for several days, followed by a free discharge from the right ear. The head symptoms became extremely severe, and from this period no further attempt to work was made. He then came to the dispensary.

Present State (May 5, 1875).—Patient is a man of medium stature, a brunette, and weighs one hundred and thirty pounds; states that his nutrition always has been good, notwithstanding the sympathetic nausea frequently experienced. Denies syphilis. Always sleeps on the affected side. He is troubled much by the cough, which is increased on introducing a speculum into the right ear, and *probing the affected ear gives rise to severe paroxysms of coughing*. He is exceedingly nervous, and has twitchings about the face. Is somnolent for days at a time, strengthless, and loses his balance in walking. *He can not swallow food without taking a mouthful of water*.

Paralysis of the right side of the face is marked, and he states that there is a weakening of the right side of the body. The right eye suffers from the exposure due to paralysis. There are constant pains in the head, and altogether he is greatly broken down.

The Ears.—The left ear never gave him any trouble, and its hearing power is very good.

There seems to be almost complete deafness in the right ear, although he fancies that some sounds are still audible.

The external auditory canals are enormous in caliber.

The inner (osseous) portion of the right canal is nearly occluded by the bulging out of its integumentary lining of the posterior-superior wall. This accumulated mass is purplish in appearance, and does not bleed like a polypoid growth when much probed; there is free bleeding, however, on scarification.

There is not a constant discharge from the middle ear, and as the membrana tympani can be seen to be present, but quite dull and parchment-like in appearance, *it is probable that its secretions escape into the mastoid, and thence find an outlet through the posterior wall of the canal, which is much broken down.*

Above and behind the auricle, just beneath the squamoparietal suture, of the size of a twenty-five-cent piece, is a soft, fluctuating tumor, slightly elevating the scalp, without much discoloration, and not tender to the touch. On passing an exploring-needle, some bloody serum was evacuated, leaving the tumor slightly collapsed. So extensive a tumor, situated rather above the region of the pneumatic cells of the mastoid, was puzzling, especially when the nervous phenomena were considered in connection with the history of occasional middle-ear inflammation, and it was, therefore, hoped that an examination of the deeper portions of the tumor might throw further light on the subject of inquiry. A free incision into the tumor was therefore made, evacuating about an ounce more of sero-sanguinolent fluid.

The collapsing walls being separated, it was found that beneath, and extending somewhat deeply, was a mass of friable structure, a portion having the hard, rough feel of bone. Deep pulsation was now felt, which accounted for the impulsion noted in the escaping fluid. The feeling of fullness in the head was very much relieved by the operation. The existence of a considerable intracranial tumor was diagnosed, and, from the tendency to bleed, which was manifested on deep probing into the tumor, it was thought advisable to avoid other surgical procedures than were necessary to secure free drainage for any secretions from the middle ear and mastoid, or from the tumor itself, and await events. Dr. R. H. Derby examined the eyes and

reported: "R. Hm. $\frac{20}{xx}$, V. = $\frac{20}{xx}$; L. Hm. $\frac{20}{xx}$, V. = $\frac{20}{xx}$. The inner half of each disc is whiter than the outer (physiological?); otherwise nothing abnormal about the nerve."

After the operation, the tumor frequently closed up, and the distension caused much pain. In the winter of 1875-'76 the patient was in a wretched state indeed, suffering greatly. He "lost his balance," and could scarcely perform locomotion. The pains in the head were "bursting," and he had a "bound feeling" in the frontal region. The condition of the right eye was worse.

The patient was now obliged to seek in-door relief, which could not be afforded by the Ear Dispensary, and he was admitted to St. Luke's Hospital, April 13, 1876. The records of this hospital show that the case was entered on the register as one of "Aural Polypi; Mastoid Disease."

Dr. George A. Peters, of the surgical staff, proposed to relieve the patient by an operation, and on May 5th, after the projecting integument found in the external auditory canal had been torn away by forceps, an incision was made into the tumor. No pus was evacuated, only serum tinged with blood, but a profuse oozing of blood followed, for the arrest of which compresses were for several days employed. The wound soon afterward healed by granulation. The patient remained in the hospital until June 26th, but *during the remainder of the summer the ear bled quite freely about every two weeks, requiring the use of a basin to catch the blood; in consequence of this, however, the tumor was no longer distended, and he was more comfortable.* On September 5th he again reported at the Ear Dispensary. There was now a red, puffy, vertical cicatrix, an inch and three quarters long, over the seat of the tumor, beneath which the edges of a perforation in the bone were felt. There was a free and offensive discharge from the external auditory canal. He slept much of the time, and had a good appetite. *The right leg was almost useless, its temperature lowered below*

the knee. In October a *large abscess formed over the apex of the mastoid* below the cicatrix; he was weaker, and, in attempting to walk, staggered and fell backward. In consequence of closure of the abscess, he was much of the time very stolid. Had an attack of vomiting which continued all day. *The right hand was very cold.* Pulse 60, weak.

The patient grew worse in November. Slept only when propped up, although continual drowsiness exists. The urine is high-colored; test shows a little albumin, but no casts or sugar. Pulse 80. Heart's action impulsive. Feet and legs swollen and cold. Failure of all the functions increased, the breath was offensive, vomiting frequent, without nausea; constipation was protracted, and was succeeded by diarrhœa with offensive smell. There were rapid loss of vision, much cough, and offensive sputa. Through December he continued to decline; was comatose. There was a free discharge of bloody fluid from the ear, and of purulent matter from the mastoid process; *almost total blindness existed, and there was difficulty in passing urine.*

In the spring of 1877 he rallied a little, but was soon worse than ever; in attempting to stand up would fall to the right; ascites came on, and he could obtain no rest without the use of an opiate. An examination of the eyes was made on April 13th by Dr. Derby, who "found him entirely blind in each eye. Pupils moderately dilated. With ophthalmoscope the retinal vessels, notably the arteries, much reduced in caliber. The optic papillæ did not present an entirely normal appearance; they were paler than in a state of health; they were not, however, a picture of atrophy, nor were there any signs of previous optic neuritis." The want of facilities prevented an exhaustive examination being made.

Death, which was very slow and easy, took place on May 21, 1877, the patient retaining his intellectual faculties to the last.

Post-mortem Examination.—On May 22d an autopsy was made by Dr. Robert Abbe, and there were present Dr. George Baxter Pomeroy, Dr. R. H. Derby, Dr. K. Reid, and the writer.

The meninges were found considerably congested, but there was no evidence of recent inflammation. The growth had pressed

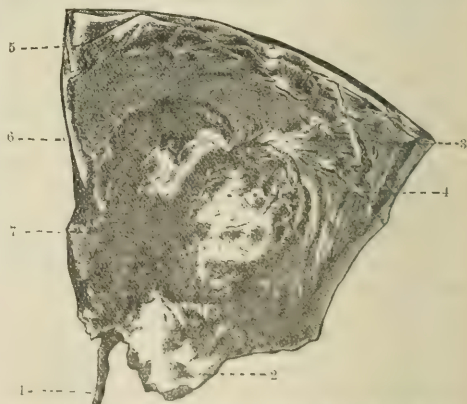


FIG. 1.—THE TUMOR *in situ*: 1, the styloid process; 2, site of the posterior condylar foramen; 3, 4, the dura mater, the edges of which have been detached; 5, 6, the tumor; 7, site of the apex of the petrous bone.

upon the cerebellum so as to make quite a hollow in that part. The meninges over the tumor were slightly adherent to the dura mater covering the growth by old plastic lymph, but readi-

ly stripped up, leaving the tumor clean. No pus was anywhere found within the skull.

A careful examination of the tumor, soon after removal, was made, the specimen having been removed from the cadaver with the contiguous bones of the skull. It occupied, externally, the anterior half of squamous plate of the temporal bone, extending forward to the articulation of the great wing of the sphenoid; anteriorly and inferiorly to the posterior wall of the meatus externus; superiorly to the level of the posterior-superior angle of the great wing of the sphenoid; posteriorly to a vertical line about one inch behind the apex of the mastoid process; downward into the mastoid process. In the space thus included the osseous tissue had been completely eroded, the external mass of the tumor being exposed. Internal to and behind the mastoid portion the osseous tissue had also been eroded to a point at the base of the styloid process, and backward to the line of the occipito-temporal articulation. The internal aspect of the specimen presented a tumor occupying the anterior surface of the petrous portion of the temporal bone, also the entire posterior surface of the same; it was covered by dura mater. The two surfaces were bulged out to the size of a turkey's egg. At the edges of the opening through the squamous plate the dura was very adherent. The whole of the petrous portion of the temporal bone was involved in the tumor, the apex alone remaining, at the orifice of which the trunk of the internal carotid presented, the same extending backward, losing itself in the tumor. A cyst-like portion of the capsule extended down behind the base of petrous portion of the temporal bone, and had the capacity of a pecan-nut.

The largest lobe of the tumor occupied the posterior surface of the petrous bone its whole length. The lesser portion of the tumor occupied the outer three fourths of the anterior surface of the bone. The center of the tumor involved the petrous portion, which it had eroded, so that the osseous walls cracked under pressure. On removing the tumor from its bed, it brought away the whole petrous bone from behind the tympanum inward to within half an inch of the apex.

The membrana tympani was found intact, with the malleus at-

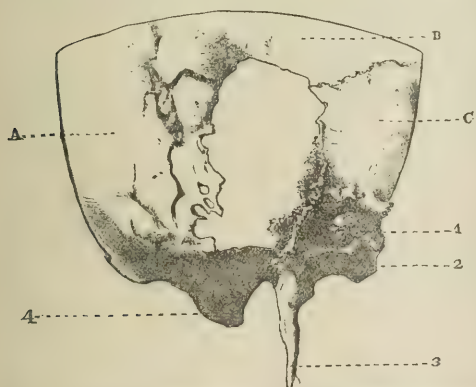


FIG. 2.—A, a portion of the occipital bone; 4, the basilar process; B, a portion of the parietal bone; C, a portion of the squamous part of the temporal bone; 1, site of the external auditory canal (the malleus is seen held in view across the tympanum by shreds of the membrana tympani); 2, the glenoid fossa; 3, the styloid process, which is unusually large in the specimen. The parts about the external auditory canal are much more broken down in the specimen than is shown in the cut.

tached, and both the inner and the middle ear were filled with tumor-tissue. Fig. 2 is an external view of the osseous portion

removed from the skull, after maceration and restoration; the tumor and broken petrous and mastoid portions have been removed. Shreds of the membrana tympani and malleus remained *in situ* even after the specimen was bleached.

The specimen, which had been preserved in alcohol and glycerin since the autopsy, and which had been somewhat mutilated by the removal of a large piece of the tumor, was examined, in August, 1884, by Professor W. H. Welch, M. D., whose interesting report, with illustrative drawing, is subjoined:

"The specimen consists of a part of the petrous portion of the temporal bone, with the adjacent dura mater. These structures are mostly occupied by a tumor. Upon the specimen sent to me evidently only a part of the tumor is present, a considerable portion having been cut away. The tumor now measures $5\frac{1}{2}$ ctm. laterally, 5 ctm. antero-posteriorly, and 4 ctm. in thickness.

"The greater part of the petrous portion of the temporal bone has been destroyed by the tumor, and is now represented only by fragments and spicules of bone in the soft mass of the tumor. The tumor projects into the cranial cavity for a distance of $2\frac{1}{2}$ ctm., in the form of an oval mass 5 ctm. long and $2\frac{1}{2}$ ctm. wide.

"The dural surface of the tumor is for the most part smooth and glistening. The dura can be traced over the surface of the tumor. It is evident that the tumor did not originate in the dura mater. There are places where the dural covering of the tumor is destroyed, and where the surface is rough and irregular.

"The part of the tumor corresponding to the external and the inferior surfaces of the petrous portion of the temporal bone is rough, and presents many bony spicules. It appears that the tumor is not complete upon this surface.

"A smooth, fibrous capsule, formed mostly by the dura mater, covers the intracranial part of the tumor, while no such capsule is present upon the basal and external surfaces.

"Upon section, the tumor presents a spongy texture. Interlacing trabeculae and membranous septa inclose little spaces, mostly minute, some as much as 2 to 3 mm. in diameter. Many of these spaces contain coagulated blood. To the naked eye the appearance is very much that of an angioma.

"Even after hardening in alcohol, the texture remains soft and spongy as that of the lung.

"Upon *microscopical* examination, it is found that the tumor is composed of a stroma inclosing myriads of spaces of all sizes, from microscopical dimensions to three millimetres. These spaces are lined with distinct cylindrical epithelial cells. Polypoid and dendritic processes, covered with cylindrical epithelium, project from the walls of many of these spaces into their interior, which they in part, or wholly, fill. This arrangement of cystic space, lined with epithelium and containing polypoid excrescences, resembles that in the so-called proliferous cystic sarcoma of the breast. As was evident to the naked eye, many of these spaces contained red blood corpuscles.

"The stroma of the tumor is composed of fibrillated connective tissue, tolerably rich both in fusiform and in round cells. In some places the stroma resembles mucoid tissue. This stroma is very rich in large and small blood-vessels. The walls of these blood-vessels contain little or no smooth muscular tissue. Particularly do many of the polypoid growths from the cyst-walls contain large blood-spaces, which sometimes occupy nearly the whole of the polypoid excrescences. It is evident that the blood in the interior of the cysts lined by cylindrical epithelium has come there in consequence of rupture of the blood-vessels and spaces in the cyst-walls. So rich are parts of the tumor in blood-vessels and irregular blood-spaces, that the structure may be described as angiomatous, although the greater proportion

of the spaces, which to the naked eye appear as blood-spaces, are glandular cysts filled with extravasated blood.

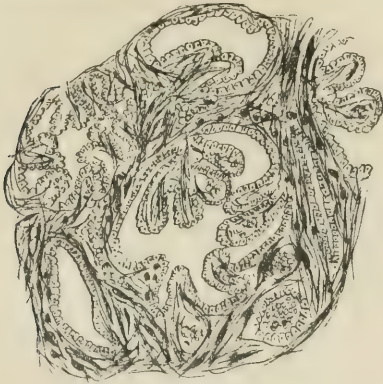


FIG. 3.

"In many places the stroma of the tumor contains a large quantity of yellowish-brown, granular hæmatoidin pigment.

"*Diagnosis.*—The tumor is a destructive cylindrical-celled adenoma. Parts of the tumor are also angiomatous. Such tumors are also described by some writers as cylindrical-celled epitheliomata (Cornil and Ranvier).

"Neither the gross nor the microscopical examination of the tumor affords any certain evidence as to the origin of the tumor. There would seem to be three possible sources of origin, namely: the dura mater, the bone, and the middle or internal ear. The relations of the tumor to the dura as above described are opposed to the idea of its origin in this structure, nor are similar tumors known to spring from the dura mater.

"The idea that a cylindrical-celled adenoma can spring from bone is so wholly opposed to the recognized views as to the origin of tumors that this source of origin may be rejected; the more so as there is nothing in the present specimen which speaks for this origin.

"There remains the origin from the middle or the internal ear, and this hypothesis may be accepted as the most probable, as in these parts are to be found cylindrical epithelial cells. In the tumor, however, none of the epithelium is ciliated.

"One may also think of Cohnheim's hypothesis as to the origin of tumors from misplaced or superabundant embryonic cells."

REMARKS.—The exceptional interest attaching to this case—no similar tumor, to my knowledge, having been described as occurring in just this situation—and the requests of some of my friends who have seen the specimen, have induced me to offer it for publication. Owing to the long continuance of the tumor, the facts bearing on its development and progress are somewhat meager, and gaps in the history of the case are numerous. On the other hand, many details, not without interest in the history, are omitted, not being essential to an understanding of the case.

In reviewing its history, it would seem probable that the tumor may have been in existence many years before finally proving fatal; thus, it will be noted that the patient had St. Vitus's dance in childhood, and was also subject to convulsions on ship-board while yet a youth. Nor must the causative influence of a purulent process in the middle ear be

overlooked in seeking for its origin, since its frequency in childhood is well known; such troubles, moreover, are frequently unrecognized or neglected.

So large a tumor connected with the skull is seldom seen, and, although intracranial growths are found, on making post-mortem inspections, which during life have given rise to scarcely any or no appreciable symptoms whatever, yet in this instance it is not so incredible that such an interesting train of phenomena occurred as that they should have existed for so long a time without a fatal result. This may have been in part due, however, to the slow growth of the tumor, which, indeed, at no time seemed to develop rapidly. After the tumor's appearance externally, it was at no time tender.

The patient always retained his appetite, notwithstanding the frequent attacks of neural nausea to which he was subject.

The tumor sought an outlet through the posterior wall of the external auditory canal as well as through the parietes of the skull, and, in fact, emptied itself through the cana after the operation at St. Luke's Hospital.

The acute aural catarrh which occurred now and then was an interesting feature, and early in the case masked the symptoms. This trouble manifested itself by the usual course of acute inflammation of the middle ear. The first attack noted in the history occurred in 1859, and gave rise to deafness and tinnitus aurium in the right ear. Of another attack, occurring in 1866, a more complete account is given; there were earache, loss of sleep, and a purulent discharge from the ear. In 1870 there was an attack of ten days' duration, and in 1875 a severe cold in the head was attended likewise with earache and discharge. The swelling said to have occurred on the "back of the neck" in 1871 was probably a mastoid abscess consequent on middle-ear trouble. These inflammations of the middle ear probably affected the progress of the tumor but little.

It is a remarkable fact that neither the invasion of the middle ear by the growth, nor the frequent attacks of acute middle-ear catarrh, should have destroyed the membrana tympani. The latter would doubtless have caused its perforation for the escape of pent-up secretions had not an outlet been afforded into the broken-down structures of the mastoid, and thence into the external auditory canal.

Vision.—The defect in sight first noted as beginning in 1872, and afterward as increasing in 1873, may have been due to the common changes of age, but the total blindness which took place a few months before death was owing to the presence of the growth.

The *psychical condition* of the patient was characteristic of brain tumors; he was depressed, secluded in manner, and wanting in energy. That he was scarcely ever free of headache or of some mental distress can well be imagined.

There was no aphasia.

Nervous Phenomena.—The presence of this tumor gave rise, naturally, to many neuropathic manifestations, to which it will only be necessary to allude: The first symptom of nervous disturbance occurred at the age of ten years, when the patient is believed to have had St. Vitus's dance. Soon afterward he was subject to convulsions. At the age of

twenty-five years the facial nerve was affected in its course through the petrous bone, causing Bell's palsy and difficulty in speech and deglutition. The right side was spoken of as "weakened" in 1875, and subsequently the right leg lost its power, and then the right arm.

The patient seems to have been treated for a long time for many symptoms without the presence of the tumor having been suspected.

The treatment adopted from the beginning after he came under observation at the Ear Dispensary was expectant chiefly; whenever the pressure of retained fluids gave rise to discomfort they were liberated, and drainage from the tumor was made as complete as possible. Nutrition was maintained and anodynes were administered when required. The utility of an operation was considered at the start, but, when the situation and nature of the growth were ascertained, it was deemed inadvisable to attempt its removal, although such a procedure has since been reported by Dr. Genzmer, of Halle ("Medical Examiner," May 3, 1877), in a fungus of the dura mater, which was unsuccessful.

TWO CASES OF MALIGNANT LYMPHOMA, WITH REMARKS.*

By LEWIS S. PILCHER, M. D.,

BROOKLYN.

CASE I.—Peter H., aged thirty-seven years, a native of Sweden, cabinet-maker by occupation, of robust physique, first consulted me in the early part of November, 1880, in consequence of a large tumor occupying the right side of the neck. It had first been noticed by him less than a year previous to this date. It had developed rapidly, and now extended from the margin of the inferior jaw downward two thirds of the way to the clavicle, and from the mastoid process forward to the median line of the neck, being bound down by the sterno-cleido-mastoid muscle, pushing the larynx over to the left of the median line, at times producing embarrassment of respiration and difficulty in deglutition. I removed the tumor, which was composed of a series of enlarged glands, on the 13th of November. Microscopic examination, as made by Dr. N. B. Sizer, revealed simply hyperplasia of pre-existing glandular tissue. The recovery from the operation was rapid and complete, and the man returned to his vocation as before.

At the end of two years, in the autumn of 1882, he again consulted me on account of an enlargement of the inferior inguinal glands of the left side, which he believed to have been excited by the frequent pressure against the corner of his work-bench to which they were constantly subjected while he was at work. This enlargement of these glands rapidly increased, so that by the first of the year 1883 the tumor seriously interfered with his locomotion. A marked impairment of his general health had also now become evident.

On the 27th of January, 1883, I removed this inguinal tumor, including also in the enucleation one of the external iliac glands; this was easily accomplished by prolonging the incision upward and outward in a curved direction upon the abdominal wall, and incising the deeper parts as for ligation of the external iliac artery. Union by first intention was secured throughout the operative wound, but the convalescence was made more protracted by attacks of severe pain in the abdomen; these were most severe at night; were not caused by, nor accompanied

with, tympanites; nevertheless, during the third week after the operation he was able to walk without fatigue or discomfort from his residence to my office, a distance of one mile. During the next three months the pain in the abdomen became more marked and continuous, requiring the daily use of morphine to render existence tolerable. A tumor could now be detected within the abdomen, situated over and to the left of the lumbar vertebrae, and evidently formed by enlarged retro-peritoneal lumbar glands.

Three months later the right inguinal glands had become so enlarged that they formed a tumor of some size. In the neck, likewise, on the side originally affected, below the mastoid process, at the angle of the jaw, and along the anterior border of the trapezius muscle, enlarged glands were visible. The patient was very desirous that these should be removed, and, at his earnest solicitation, both groups of enlarged glands were extirpated. This was done August 3, 1883. Union by first intention was secured in both localities, notwithstanding the cachectic condition of the patient.

Six weeks later a line of enlarged glands could be detected along the margin of the true pelvis on both sides. Ten days later, September 27, 1883, my last examination of him was made. His anæmia, as evidenced by pallor and increasing weakness, had become great. There was some oedema of the face, most noticeable mornings, with marked oedema of the outer side of the left thigh and of the scrotum. Examination of the urine gave negative results. There was no great appreciable enlargement of the spleen. He suffered much from abdominal pain, requiring increased amounts of morphine for its control. He walked about with difficulty. A few days later he sailed for Sweden, his native country, where, after a few weeks' longer suffering, he died from exhaustion, December 6, 1883.

From the first appreciation of any glandular enlargement to the time of death about four years elapsed. This time is divisible into three periods.

1. A period of primary localized glandular disturbance, extending over one year, and brought to an end by the first operation.

2. A period of quiescence of about two years. During this period the general health remained fair. He worked regularly at his trade and supported his family, but yet it was with more effort, and with less ability to endure than had been his former wont. There had taken place a very appreciable permanent impairment of his general strength.

3. A period of progressive anæmia, with diffuse glandular disturbance, extending through one year, and ending in death.

The chief medicinal agents that were used in the course of this case, in addition to the morphine, already mentioned, were preparations of iron and of arsenic, but no advantage could be discovered to be derived from them at any time.

CASE II.—Jas. R. T., aged twelve years and a half, a bright, studious, but somewhat delicate lad, whose father had died of laryngeal and pulmonary tuberculosis, and whose maternal grandmother had died of cancer of the breast. For a number of weeks the boy had been noticed to be somewhat languid, and in his general bearing to otherwise evince depression. One of the most noticeable signs of this consisted in a stiffness of the neck with which he frequently found himself affected on rising in the morning. Following upon this history he developed a croupy cough, which was most noticeable at night. This, being considered the result merely of a passing cold, was, for a week or more, treated by confinement to the house, and by simple domestic remedies. Nevertheless, the cough became more continuous, and paroxysms of severe dyspnoea had begun to occur at intervals when I was first called to see him, on the 30th of January, 1882. His condition was then similar, in general, to

* Read before the New York Surgical Society, November 25, 1884.

that manifested in the earlier period of a severe attack of catarrhal laryngitis, presenting fever, loss of voice, painful, dry, frequent, smothered cough, differing in this one respect of its muffled character from the harsher and more resonant cough of laryngitis. The breathing was somewhat labored and accelerated, with occasional exaggeration of the dyspnea. But, in addition, the gums were swollen and spongy, and the tonsils and the submaxillary glands were enlarged. The remedies usually efficient for the relief of catarrhal laryngitis were used during the first week of my attendance without benefit, beyond the alleviation caused by opiates. Meanwhile the swelling of the gums continued to become more marked until they were above the level of the teeth, and began to break down into spots of ulceration at many points. The same ulcerative process began to manifest itself in the tonsils likewise, and the pain on swallowing and on coughing was such as to indicate that the larynx was also the subject of ulceration. The condition of the mouth and fauces was such as to make a laryngoscopic examination out of the question. Now for the first time a general enlargement of all the lymphatic glands of the neck was noticed. These enlarged glands were not tender, nor was any one gland or set of glands greatly enlarged, the size of a hazel-nut, perhaps, being about that apparently presented by these glands. The general involvement of all these glands on both sides of the neck was such as to preclude the theory that these enlargements were due to the propagation of infection from the mouth or fauces, and to awaken in my mind the conviction that they were the expression of some general blood infection. While, therefore, the local troubles of the mouth and larynx were treated by stimulating and detergent gargles, and by insufflations of iodoform, special attention was directed toward antagonizing the evident general blood dyscrasia. For this purpose iodide of iron, cod-liver oil, and alcoholic stimulants were used. No effect upon the progressive march of the disease resulted from the remedies used. The ulcers in the mouth and fauces extended; the difficulty of swallowing increased; the croupy cough persisted, and was most harassing, while the labor of respiration was always marked. The condition of the glands remained unchanged, while pallor of skin and progressive debility marked the increasing impoverishment of the blood. No examination was made as to the condition of the spleen.

By the middle of the third week of my attendance the growing failure of the child's strength had reached such a degree that the greatest apprehensions as to a speedy fatal result were unavoidable. To what extent the undermining of the general powers might be due to the prolonged, laborious respiration, and to the sufferings caused by the functional activity of the swollen and ulcerated larynx, could not be positively estimated, but, inasmuch as there was a possibility that the chief cause of the dyspnea might be laryngeal obstruction, and nothing but good could come from diverting the respiratory current for a time from the ulcerated larynx, this was done on the seventeenth day after the lad came under my observation. The operation was attended by persistent capillary oozing from the surfaces exposed by the incisions. This was finally controlled by uniting together the edges of the tracheal incision and the skin incision on either side by sutures, thus accomplishing continuous pressure upon the raw surfaces. Only partial relief from the dyspnea was afforded by the operation. Though the child rallied fairly after the operation, the breathing became rapid and shallow after a few hours, and he died quietly, by asthensia, fourteen hours after the operation. No post mortem.

It is greatly to be regretted that the light which a post-mortem examination might have shed upon this obscure case was not obtained. I have but little hesitation, however, in classing it as a case of malignant lymphoma. The effect of the trache-

otomy was to demonstrate the intrathoracic location of the respiratory obstruction. The frequency with which dyspnea and cough are produced by the pressure of enlarged thoracic glands has long been recognized. Pressure on the recurrent laryngeal nerve may also have contributed to the spasmodic croupy attacks. The date at which the bronchial and other thoracic glands may have first begun to enlarge must remain uncertain, as a variable period may have been required to enable them to reach that stage at which obstructive and irritative symptoms, alternately produced by them, declared themselves. In the history of the case it was noted that a sudden and general enlargement of the glands of the neck took place. That some enlargement of these glands had not existed prior to the date of this discovery I would not assert. The peculiarity and interest attaching to them lie in the fact that so many of them, and these so widely diffused, were all at once noticed to have become enlarged, without being either painful or tender.

The early prominence of the stomatitis in this case is of interest in connection with the statistics of Gowers, in Reynolds's "System of Medicine" (1879, vol. v, p. 329, art. "Hodgkin's Disease"), where, in analyzing a group of cases in which the first symptoms depended, not on the glandular enlargement, but on the accompanying blood state, the statement is made that in two of these stomatitis was the earliest symptom. The appearance of the swollen gums in this case was unlike anything else I have ever witnessed. They formed a dull, livid, spongy ruffle, in which the teeth were set, giving the impression to the eye of tissue having a low grade of vitality, so that the melting down at points into complete necrosis was quite in keeping.

The two cases which have been detailed present the two extremes of chronicity on the one hand, and of acuteness on the other, that may be manifested by malignant lymphoma. A period of four years is far beyond the average time which intervenes between the first glandular enlargements and the final fatal termination, while a period of but little more than four weeks is quite unparalleled by any recorded cases of which I have been able to find mention. They both, however, presented, clearly marked, these essential features: A progressive blood deterioration, advancing steadily to a fatal termination, unaffected by remedies; and diffused, non-inflammatory glandular enlargements.

The differences of the accidents of the disease in these two cases were not greater than are often seen in other diseases which are recognized as being essentially of identical nature, as, for instance, tubercular disease of bones and of the meninges of the brain.

As to the etiology of malignant lymphoma, reflection upon the phenomena which attend its course leads one to put forth the hypothesis that the essential cause of the disease is a specific infecting micro-organism, upon the growth and activity of which the blood changes and the lymphatic glandular enlargements depend. The intensity and rapidity of development of the primary symptoms must depend on many things, and especially upon the original resisting power of the individual. Upon the special group of glands that may be first, or most largely, implicated in the localized gland-infection, will depend also many of the peculiar accidents of each case.

If, as is not impossible, each affected gland is, in turn, a new focus of active germ proliferation from which an increased dissemination of the special poisonous elements takes place, the early and repeated extirpation of the affected

glands would be a rational procedure, but this only as an accessory measure to those more general germicidal or antiseptic measures that might help to purify the blood stream itself, if any such can be found.

THE SIGNIFICANCE AND RADICAL CURE OF URETHRAL STRICTURE.*

By H. W. STREETER, M. D.,
ROCHESTER, N. Y.

I would call your attention especially to the following points: "The normal caliber of the urethra; the importance of stricture of large caliber; the common dependence of gleet, vesical irritation, and of various reflex symptoms upon such strictures; the frequency of stricture in the anterior part of the canal, and its infrequency in the deep urethra; the possibility of a radical cure by dilating urethrotomy, and its great advantages over dilatation in regard to safety, comfort, time, and permanency of results" (Otis). Stricture is a contraction or want of distensibility of the urethra. It is the product of inflammation in and just beneath the mucous membrane. It may be the slightest encroachment upon or a complete coarctation of the canal. Every hose-pipe is constructed smallest at the nozzle, to facilitate both retention and expulsion of its contents. The meatus is the narrowest part of the urethra. The normal caliber of the urethra is the caliber of the uncontracted meatus. Any instrument which will enter should pass the whole length freely. The term stricture is purely relative, and there is no fixed standard any more than there is for the mouth or vagina, for the hand or foot. The size of the penis and of the meatus should approximately correspond. It is maintained, as the result of many examinations, that there is a fixed relation of one to three and a half. I can see no reason why the bulbo-membranous junction should be taken as the gauge. It should be borne in mind that the meatus is more or less contracted in a great majority of cases. Stricture may be thread-like, or tape-like, or irregular, and there may be any number, from one to as many as the length of the canal affords space for. It may be located in any part except the prostatic. From the pathology of the disease, it should be found in greatest frequency where the preceding inflammation begins the earliest, rages the hottest, and lasts the longest—that is, in the anterior urethra—and such has been found to be the case. Deep spasmodic stricture can not be distinguished from organic, and yet will disappear upon cutting the anterior contractions. Otis places less than $11\frac{1}{2}$ per cent. of 258 strictures deeper than $4\frac{1}{4}$ inches, less than $5\frac{1}{2}$ per cent. deeper than $5\frac{1}{4}$ inches. The meatus is the point most frequently strictured. An ordinary-sized penis, which will only take an 8 or 9 English or 14 or 15 French sound, has stricture (Keyes).

One patient suffers and another does not, in accordance with the existence of gonorrhœa, balanitis, masturbation, excessive venery, or other excitants of inflammatory action and plastic exudation. While no advocate of indiscriminate incisions of the meatus urinarius, I believe that we

can not too carefully scrutinize every case, and that we should not neglect this condition as too trifling to be worthy of our notice, or omit to cut any meatus when contracted and accompanied by symptoms justly attributable thereto or for which there can be discovered no other cause. A very large proportion of all strictures are universally admitted to be located in the spongy, straight, or pendent urethra—i. e., within the first five or six inches. Most cases treated as deep organic stricture have no actual existence. The study of this point is worthy of our most serious consideration, and the establishment of the proposition does away, to a great extent, with one of the most serious of surgical operations—external urethrotomy behind the pubic curve—and also places among readily curable diseases a large class of cases otherwise incurable or little amenable to treatment. Gonorrhœa is the usual cause of stricture, although I think masturbation is much more frequently productive thereof than has been generally recognized. If the preceding inflammation persists for any length of time, the inevitable pathological process, "plastic effusion," commences, and, unless arrested, is certain to result in permanent narrowing of the canal, although the symptoms may or may not appear for a long time. Acute gonorrhœa, like other acute inflammations, is self-limited, and, if it persists or recurs without fresh exposure, there is a complication present which is inevitable, and must be appreciated and removed before the gleet can be pronounced permanently cured. That complication is stricture of the pendulous urethra, and the continuance of the discharge is due to arrest of the stream of urine and retention of a residual drop. It is especially important to recognize stricture in its earliest stages, while it is slight and soft and easily curable, and before it has become large and hard and productive of serious complications. The urethral walls must be kept supple and elastic, and the balance between the natural expulsive force and the friction along the urethra preserved, in order for the functions and secretions of the part to be normal. *As a rule*, gleet depends upon stricture, although the latter may exist without gleet. Henry Dick, of London, recognized this years ago. Sir Henry Thompson calls attention to its importance, and says it is often overlooked. Keyes and Bumstead indorse this opinion, and Otis says gleet *always* depends on stricture of greater or less degree. Frequent micturition is the next most common symptom; how common, is signified by its prevalence without any known cause, and resisting all treatment until the cause is removed. Its disappearance is one of the most remarkable and satisfactory results of internal urethrotomy. Other symptoms are nervous debility and irritability, chilly sensations, neuralgic pains of the testicles, cord, penis, bladder, perinæum, lumbar region, through the hips and thighs and down the legs, and in the soles of the feet, and may be as protean as the symptoms of uterine disease. As long ago as 1850 Civiale called attention to these reflex phenomena, dependent upon the slightest as well as upon marked strictures, and said their complete disappearance was so prompt after division of a slight stricture as to be almost incredible but for the frequent repetition of the instances. The slightest obstruction is liable to produce the gravest local

* A synopsis of a paper read before the Rochester Pathological Society, September 24, 1884.

and general symptoms. When we consider the anatomy of the genital organs and their intimate relation with and wonderful influence over all other parts of the body, as exemplified in our own daily personal and professional experience, we are *amazed*, not that so much is attributed to stricture, but that this relation was not recognized universally years ago, and that it is not more generally acknowledged even to-day.

The diagnosis is simple, yet in few conditions have more errors been made. In many cases of so-called kidney complaints, chronic inflammation of the neck of the bladder, enlarged prostate, nervous and functional disturbance of various organs, the pathological condition upon which they depend is never suspected. Far be it from the writer to attribute all urinary and reflex trouble to this cause; but there is, it will not be denied, a great deal of very careless diagnosing and hap-hazard prescribing for these complaints. There is no danger of our being any *too* particular or scientific in diagnosis, and we shall not lay too much stress on this subject if its consideration leads us to an accurate diagnosis of *something*, instead of covering up our ignorance and calming the patient's mind by vague and equivocal phrases. The unfavorable prognosis should never be pronounced until all the methods of modern research have been exhausted. In every case of gleet or frequent micturition or functional troubles of which the cause is not clear, the caliber of the urethra should be tested. No attention should be paid to the positive assertions of the patient that "he has no trouble of that kind," or to our own prejudices *pro* or *con*. If there is a doubt, the *experimentum crucis* should be made, for it is a matter of too great importance, both as regards our professional honor and our patient's welfare, to allow even the shadow of uncertainty to hang over the diagnosis. The proportionate size of penis and meatus, and the presence of a cicatrix or contraction, should be noted. The urethra should be explored with the bulbous bougie (and never should any other be depended upon, for it is impossible to make an accurate diagnosis with the common catheter or sound), and the location, thickness, and breadth of each stricture, if any exist, accurately measured. This instrument at once removes all doubt, and gives a most satisfactory sense of certainty, both physician and patient distinctly *feeling* any obstruction. Decided contractions are not liable to escape notice. It is the slight ones, especially at and near the meatus, which are very common, which have been and are often overlooked.

The object of treatment *has been*—first, to relieve the symptoms; second, to remove the cause, if possible. It *should be*, first, to remove the cause, and the symptoms will take care of themselves. As well attempt to remove a ligature tied around the penis by internal medication as to expect to remove an internal cord thereby. How large a proportion of cases of gleet have been treated by injections, balsam copaiba, and sandal-oil, and how inefficacious is such treatment, is well attested by the immense number of these patients infesting the land, wandering around from one doctor to another. While internal remedies may temporarily check the discharge, nothing short of a complete restoration of the canal to its normal caliber will effect a permanent cure,

no matter what the circumference of the urethra. Erosions are seated upon strictures, and are caused by friction and retained secretions, and applications thereto can only produce temporary, if any, benefit. The use of caustics with the idea of burning out a gleet or stricture has been very appropriately stigmatized by Liston as "most atrocious," and can only be harmful. Rapid dilatation by tying in a catheter is painful, barbarous, and unscientific. Little has ever been claimed for it.

Electrolysis, though extravagantly heralded as a cure-all in the journals, is not indorsed by Thompson, Otis, Bumstead, Van Buren and Keyes, Gross, Holmes, Althaus, or Beard and Rockwell, the leading English and American authorities upon stricture, venereal surgery, or electricity, or any other standard authorities with which I am acquainted, and by most of them is entirely ignored. My own experience with electrolysis, strictly in accordance with directions and after many years' practice, was devoid of any appreciable benefit. Professor Gross, in his recent elaborate article in the "American Journal of the Medical Sciences" on the analogous condition of stricture of the œsophagus, does not mention it. Electricity, like any other medicine, has to be used in definite doses or strength to produce definite effects, and there is no reason why the urethra should form an exception to this rule. By their sweeping assertions, the exponents of this method totally ignore the opinions and the skill of the great mass of the profession, and of the learned and experienced surgeons of our hospitals and colleges. The consummate assurance displayed in some of these statements can only be explained by a mistaken diagnosis, a misinterpretation of the effects of the electricity for that of the dilatation or other means employed in conjunction therewith, or by the promptings of interested motives.

Gradual dilatation is and has been the standard treatment. While palliative, it can not be, nor has it ever been asserted to be, radical. Most patients persist with it until they get tired out, and then only resort to it as occasion may require, never cured or expecting to be cured. It is agreed that the passage of the sound must be regarded, like a glass eye or wooden leg, as a necessary evil, likely to be continued at indefinite intervals during the remainder of life. The great majority of strictures are of large caliber at or near the meatus and within the pendent urethra; they are resilient and obstinate, and only require time to become tight contractions in many cases. There is no reason why dilatation should produce more than temporary benefit any more than in a similar external condition; in the latter it certainly would not be expected to do more. Divulsion is useless unless the stricture is ruptured. The passage of a full-sized sound (and any other is useless) is painful, repulsive, and liable to excite inflammation and leave the patient worse off than before. The passage of any instrument into the bladder is liable to be followed by urethral chills and fever, often serious when least expected. While thousands have been relieved by dilatation during an existence prolonged thereby, common humanity and professional pride alike forbid us to accept as the acme of our ambition *any treatment which cures only upon condition of its being continued for ever*. An external contracted band of tissue or a

strictured meatus is severed by the knife, without a thought of stretching, caustics, electrolysis, or other treatment.

There has been no reason why the analogous internal cord should not be divided, except the want, till comparatively recently, of suitable instruments. As with the external cord, the stricture must be completely severed, and as little adjacent tissue as possible. To accomplish this, the part must be rendered tense, and the blade concealed except while passing through the abnormal tissue. Bumstead, Keyes, and Otis emphasize the importance of strictures of large caliber, and agree practically as to the frequency of anterior ones and the necessity of cutting them before they can be declared cured, on account of their peculiar proneness to recontract after dilatation. Incising the straight urethra is a simple and safe proceeding, as shown by over fifteen hundred cases reported up to 1880, without a serious accident, by surgeons of established reputation. It is not so painful or dangerous as dilatation (with the full-sized sound passed into the bladder, as usually done), nor as continuous dilatation, nor as division. Little or no pain is complained of (the stricture being tense), subsequent hæmorrhage or inflammation is trifling, and the patient is not interrupted in the performance of his daily duties. The reflex symptoms are usually at once relieved and do not return, and the gleet disappears in a few days. If a repetition of the operation is required, it is due to imperfect division of the contractile band or to complications. It *should be radical* in every case, unless there are serious complications, and that it has been in a very large percentage is shown by the large number of cases reported, and re-examined at intervals of several years, by Professors Otis, Brown, Pease, and others. By relaxing the contraction and spasm, and allowing the irritation and inflammation to subside, the elasticity of the muscular coat of the urethra is restored, the circulation of the mucous membrane and submucous tissues becomes healthy, and the absorption of the effused product is promoted. While naturally incredulous of innovations, of the importance of strictures of large caliber, and of internal dilating urethrotomy, I have been convinced, by long experience, that its results in the treatment of stricture are not approached by any other method, and that it is founded upon common sense, a correct appreciation of the anatomical relation of the parts, of the pathology of the disease, and of the principles of scientific surgery.

104 WEST MAIN STREET.

Book Notices.

BOOKS AND PAMPHLETS RECEIVED.

A Hand-book of the Diseases of the Eye and their Treatment. By Henry R. Swanzy, A. M., M. B., F. R. C. S. I., Surgeon to the National Eye and Ear Infirmary, etc. With Illustrations. New York: D. Appleton & Co., 1884. Pp. xv+437.

Éléments de pathologie chirurgicale générale. Par F. Terrier, Professeur agrégé à la Faculté de Médecine de Paris, etc. Premier fascicule. Lésions traumatiques et leurs complications. Paris: Félix Alcan, 1885. Pp. 419.

The Story of My Life. By J. Marion Sims, M. D., LL. D. Edited by his Son, H. Marion-Sims, M. D. New York: D. Appleton & Co., 1884. Pp. 471. [Price, \$1.50.]

Contributions to Surgery and Medicine. Part I. Intestinal Disease and Obstruction. London: H. K. Lewis. Pp. 284-xvi.

A Pharmacopœia for the Treatment of Diseases of the Larynx, Pharynx, and Nasal Passages; with Remarks on the Selection of Remedies and Choice of Instruments, and on the Methods of Making Local Applications. By George Morewood Lefferts, A. M., M. D., Clinical Professor of Laryngoscopy and Diseases of the Throat, College of Physicians and Surgeons, New York. Second Edition, revised and enlarged. New York and London: G. P. Putnam's Sons, 1884. Pp. iv+101. [Price, \$1.]

Forty-first Annual Report of the New York Association for Improving the Condition of the Poor, for the Year 1884.

Correspondence.

LETTER FROM WASHINGTON.

The Rag Importation Order.—The Providence Hospital Board.

WASHINGTON, November 24, 1884.

SECRETARY McCULLOUGH has made another change in the rag-importation order, of a very satisfactory sort. He had received the following petition, signed by a number of well-known New York physicians:

"We, the undersigned, recognizing the fact that there is great danger of the introduction of Asiatic cholera into the United States through the medium of old rags imported into the country and coming from European ports, do hereby respectfully suggest and urge upon you the necessity for immediate and decisive action in reference thereto.

"We are prompted thus to appeal to you because of the recent removal of restrictions on the importation of old rags, and it is our firm belief that this threatened danger can only be averted by the most thorough and systematic disinfecting of all old rags coming from any and all European ports," etc.

The Health Officer of New York, writing to the Collector of Customs at that port on the subject of the importation of gunny bagging, under date of October 25, 1884, said: "I do not think 'old bagging' should be classed among such merchandise as 'old rags.' The former is scarcely more objectionable as a carrier of infection or contagion than the bags in which many articles of merchandise are imported. The latter (rags) are notoriously not only filth carriers, but liable to contain the germs of disease, from the fact that they are often gathered from the streets, into which they may be thrown after being used by those sick of contagious or infectious diseases, or their attendants. That 'old rags' are not often cleansed before importation is proved by the confession of large importers at this port that they [rags] are 15 per cent. less in gross weight when properly cleansed."

The Medical Society of the District of Columbia, at its last meeting, after some discussion, unanimously voted the passage of a resolution setting forth that, in the opinion of the society, the prohibition of the importation of old rags from infected districts was a wise measure in the interest of the public health.

At the last meeting of the Providence Hospital Board, Dr. S. A. H. McKim was elected president, *vice* Dr. Grafton Tyler, deceased, and Dr. J. W. Bulkley was elected vice-president. Dr. J. H. Roberts was re-elected a member of the active medical staff.

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THE PROCEDURE IN INSANITY CASES.

THE sensible procedure recently adopted in this State, providing for the settlement of the question of insanity in criminal cases before the trial of the prisoner on the main charge, has its counterpart in some of the Western States, and seems likely to render criminal trials more satisfactory than they have been in the past. In a recent case, in Wisconsin, it was stated that the law required that an investigation should be had in cases where there was a probability that the prisoner was insane, and that this should be had before his trial. This question was submitted to the jury, in the case referred to, and the point was, whether a jury trial on such matters was a right. The court held that this was not essential, and that the question could come before a jury or a commission specially appointed. In the Rhinelander case, in this city, the most recent case of importance in this State, the matter was referred to a commission, but, by a strange anomaly, the report of such a commission has no binding effect upon the court, which can accept it or reject it, in its discretion. In fact, in the Rhinelander case Recorder Smyth did reject the majority report, which declared Rhinelander insane, and adopted that of a single commissioner, to the opposite effect. Such a result would certainly not have happened if the question had come before a jury, as in the Wisconsin suit. Whatever the decision of a jury might have been, it would surely have been accepted as final.

It is an interesting inquiry, whether, under the Wisconsin law, if the matter had been referred to a commission instead of a jury, its report would have been conclusive and binding. The results in a number of recent cases, in which insanity has been held to have been established by the testimony of skilled witnesses, have not been wholly to the taste of the community, for in some of them the persons have afterward been adjudged to be perfectly sane. There is a feeling that the question of insanity can be decided quite as fairly by a jury as by experts, especially when the latter are called to sustain one side of the question or the other, and are not absolutely impartial. The opinion of the court, in the Wisconsin case, will be of interest as giving an historical statement of the usual procedure. It says: "The statute certainly did not give a jury trial as a matter of right upon such collateral issue. It says 'the court shall' make inquiry thereof in a summary manner, by jury or otherwise, 'as it deems most proper.' Undoubtedly it may, in a proper case, make such inquiry by a medical commissioner or otherwise. The method of making inquiry is left to the discretion of the court. So it appears that a trial by jury of such preliminary and collateral issue was not a matter

of strict right prior to the Constitution. 'There are,' said Sir Matthew Hale, 'two sorts of trials of idiocy, madness, or lunacy; the first in order to the commitment or custody of the person and his estate, which belongs to the King, either to his own use and benefit, as in the case of idiocy, or to the use of the party in case of accidental madness or lunacy; and in order hereunto there issues a writ or commission to the sheriff or escheator or particular commissioners, both by their own inspection and by inquisition, to inquire and return their inquisition into chancery; and thereupon a grant or commitment of the party and his estate ensues; and, in case the party or his friends find themselves injured by the finding him a lunatic or idiot, a special writ may issue to bring the party before the Chancellor or before the King to be inspected.' . . . Hence, where the return of the commission was unsatisfactory to the Chancellor, he would quash the same and issue a new commission. . . . 'It is a practice by no means uncommon in cases of lunacy,' said Lord Eldon, 'that, when the lunatic can not be removed to the jury, and it is inconvenient for the jury to go to the lunatic, one or two of the jury examine the lunatic and report their observations to the rest.'"

ALEXANDER'S OPERATION OF SHORTENING THE ROUND LIGAMENTS.

IN this ingenious age one must have rare originality to devise anything really new. Dr. Alexander, of Liverpool, must certainly be credited with this quality, for he has devised an operation for the permanent correction of inveterate and otherwise intractable retroversions of the uterus, which operation, simple as it seems in theory, appears to be quite original. As our readers are aware, the operation consists in shortening the round ligaments, which is readily done by cutting down upon them as they pass through the external inguinal ring, drawing them out to the desired extent, and then securing the "slack" in the wound.

The operation has now been performed about thirty times, and, so far as our information goes, without any bad results. As regards the correction of retroversion, it seems to be satisfactory, but it should not be forgotten that the cause of the condition is not done away with by it. On looking over the notes of several of the cases, we have been struck with the fact that, although the uterus was retained in its normal posture, it did not return to its natural size. This is an important matter, since it points to some other abnormal state (perhaps a laceration of the cervix) which ought to have been remedied before an attempt was made to cure the inclination.

It should be noted that the purpose of the operation is different in cases of retroversion from what it is in cases of prolapse. The idea is to exercise just enough traction upon a retroverted uterus to keep it in a position of slight anteversion, the weight of the overlying organs being the chief agent in preventing a return of the backward displacement. In prolapse, on the contrary, there is really a mechanical lifting of the organ by means of the round ligaments, which sooner or later will tend to yield to the strain. It is true that pessaries may be used

to relieve this strain, or colporrhaphy may be resorted to, but the probability is that the tissues will yield in time, as Dr. Emmet has shown to be the case after most plastic operations about the female genitals.

But the fact remains that Alexander's operation is a clever one, and nothing could be more frank than the manner in which its originator acknowledges its limitations. For the class of cases in which he recommends it, it is undoubtedly a most ingenious method of overcoming a condition that often proves intractable.

MR. GAMGEE ON MEDICAL CHARITIES.

We have received a copy of an address on this subject, delivered by Mr. Sampson Gamgee, of Birmingham, England. Mr. Gamgee's extended experience with the practical workings of the dispensary system has caused him to be regarded in his own country as an authority in the matter. The address deals with affairs of more than local interest, and the deductions drawn may be applied to some extent to our own medical charities. The point most urged is that out-patient relief has to a great degree ceased to be a true "charity," and is now dispensed in an indiscriminate and irrational way, "with the net result of doing the minimum of physical good and too often the maximum of moral harm"—quoting from the "British Medical Journal." Mr. Gamgee also aptly calls attention to the fact that, with the crowds that, under the present system, throng his clinic, the physician is "practically paralyzed for his best work." No one who has been engaged extensively in dispensary practice will deny that it stands in the way of careful diagnosis and treatment, however conscientious the medical attendant may be. The writer suggests as a remedy for the present abuses that the working classes, who contribute so largely to the support of hospitals, should be allowed to have an actual share in their management. Under this system, he thinks, not only will worthy applicants be recommended for relief, but the idle and shiftless will be prevented from "reaping where they have not sown." The key-note of Mr. Gamgee's address is, let the working classes be taught to feel that they are not mere objects of charity, but that they have a right to the aid of institutions which they themselves sustain.

NEWS ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending December 9, 1884:

DISEASES.	Week ending Dec. 2.		Week ending Dec. 9.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid Fever.....	45	12	19	14
Scarlet Fever.....	50	12	60	13
Cerebro-spinal meningitis...	9	9	3	3
Measles.....	111	20	126	20
Diphtheria.....	59	33	73	40

Free Trade in Contagious Diseases.—The "Evening Post" quotes from the London "Graphic" the following remarks apropos of a person recently elected to Parliament: "Professor Stuart is opposed to compulsory vaccination, and was heartily supported by all the Hackney anti-vaccinators. By the time that democracy wins all along the line we shall probably have strict protection against food and manufactures, but unlimited free trade in contagious diseases."

An Emergency Hospital.—It is announced that the Board of Apportionment has set aside the old Gouverneur Market for the use of the Department of Charities and Correction as an emergency hospital, in case of an outbreak of cholera.

The Essex County, N. J., Asylum for the Insane.—We understand that Dr. Livingston S. Hinkley, of New York, has been appointed Medical Superintendent of the asylum, which is situated in Newark. Dr. Hinkley was formerly connected with the New York City Lunatic Asylum.

The National Conference of State Boards of Health met in Washington on Wednesday, and the president, the Hon. Erastus Brooks, of New York, read an address, in which he called for increased work by the general Government in sanitation.

The Death of Dr. A. B. Craig, of Montreal, professor of medicine in the Montreal School of Medicine and Surgery, is recorded by the "Union médicale du Canada."

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from November 30, 1884, to December 6, 1884:*

IRWIN, B. J. D., Major and Surgeon. Granted one month's leave of absence. S. O. 112, Department of Arizona, November 28, 1884.

O'REILLY, ROBERT M., Captain and Assistant Surgeon. Assigned to duty as Attending Surgeon, Washington City, D. C., to date from October 20, 1884. S. O. 284, A. G. O., December 4, 1884.

BARROWS, C. C., First Lieutenant and Assistant Surgeon. In addition to other duties, to take charge of Medical Division Office, Department of Arizona, during absence of Surgeon B. J. D. Irwin. S. O. 112, Department of Arizona, November 28, 1884.

KNEEDLER, WILLIAM L., First Lieutenant and Assistant Surgeon. Relieved from duty at Fort A. Lincoln, Dakota Territory, and ordered to Camp Poplar River, Montana Territory. S. O. 140, Department of Dakota, November 25, 1884.

PILCHER, JAMES E., First Lieutenant and Assistant Surgeon. To be relieved from duty at Camp Poplar River, Montana Territory, and ordered to Fort A. Lincoln, Dakota Territory. S. O. 140, Department of Dakota, November 25, 1884.

McCAW, W. D., First Lieutenant and Assistant Surgeon. Relieved from duty at Fort Wingate, N. M., and ordered to Fort Lyon, Col. S. O. 228, Department of the Missouri, November 26, 1884.

GRAY, CHARLES C., Major and Surgeon (retired). Died at Geneva, N. Y., November 26, 1884.

Society Meetings for the Coming Week:

MONDAY, December 15th: New York County Medical Association; Medico-Chirurgical Society of German Physicians of New York; Hartford, Conn., City Medical Society.

TUESDAY, December 16th: New York Academy of Medicine (Section in Theory and Practice of Medicine); New York Obstetrical Society (private); Medical Society of the County of Kings, N. Y.; Ogdensburg, N. Y., Medical Association.

WEDNESDAY, December 17th: Northwestern Medical and Surgical Society of New York (private); Medical Societies of the Counties of Alleghany and Tompkins, N. Y.; New Jersey Academy of Medicine (Newark).

THURSDAY, December 18th: New York Academy of Medicine; New Bedford, Mass., Society for Medical Improvement.

FRIDAY, December 19th: Roman Medical Society of New York (private); Chicago Gynecological Society (private)—Discus-

sion on Extra-uterine Pregnancy, to be introduced by Dr. William H. Byford, with a paper on "A Case of Interstitial Pregnancy").

SATURDAY, December 20th: Clinical Society of the New York Post-Graduate Medical School and Hospital.

OBITUARY NOTES.

Dr. Henry Austin Martin, of Boston, died on Sunday, the 7th inst., at the age of sixty. Dr. Martin was born in England, but came to this country at an early age, took his medical degree at Harvard in 1845, and thereafter practiced his profession in Boston, with the exception of the period of his service in the army during the civil war. He was a member of the American Medical Association, of the Massachusetts Medical Society, and of the Gynecological Society of Boston.

Dr. Martin had a preference for surgical practice, and the later years of his life were largely given to that branch, in which he displayed considerable originality. He was the promoter of the use of the solid rubber bandage and of the omission of the tube in the operation of tracheotomy. He was best known, however, for his long and careful study of all that pertains to the theory and practice of vaccination, and as having been the first man in this country to practice animal vaccination by the method that has now come into general use.

He was a writer of rare power, especially in controversy, but his published productions were not numerous. He was also a ready and forcible speaker. Earnestness was the chief trait of his character, as it must have appeared to those who met him by chance; but close acquaintance revealed a fund of humor and kindly feeling that made him very strong with the few who knew him well.

Letters to the Editor.

THE EMBARGO ON RAGS.

Boston, November 24, 1884.

To the Editor of the *New York Medical Journal*:

SIR: My attention was to-day directed to a letter from your Washington correspondent, appearing in the last issue of the "*New York Medical Journal*," November 22d, in which I find the following paragraph:

"It is sincerely hoped that the authoritative statement of the tracing of the Parisian epidemic to imported rags will for ever put at rest such mischievous assertions as that iterated and reiterated by the ragmen, that 'no epidemic disease has ever been traced to rags.' Even so straightforward a journal as the '*Boston Medical and Surgical Journal*' has given currency to this assertion, and has been unable to see any wisdom in the governmental order. It is hoped that those eminent sanitarians, the publishers, have not furnished the editorial eye-glasses."

Permit me to say that the insinuation conveyed by the last sentence is, as a matter of taste, a mean one, unworthy alike of the correspondent, if a member of our profession, or of the journal which publishes it. As a matter of fact, which is sufficiently well known to have made it easily possible for your correspondent to inform himself had he cared to, the publishers of the "*Boston Medical and Surgical Journal*" have nothing whatever to do with its editorial management. That journal is, probably, the only weekly medical periodical in this country, except the "*Journal of the American Medical Association*," which is owned neither by its publishers nor by its editor. Its position, therefore, enables it pre-eminently to speak on such

questions of general public and professional interest as the embargo on rags without fear and without favor.

The attitude we assumed in regard to the arbitrary embargo on rags we believe to be the correct one; we gave our reasons for it, and are ready to support it until convinced by facts or courteous arguments that we were wrong. To such we shall be always glad to give our attention. Had your correspondent offered any proof that the outbreak of cholera in Paris was due to old rags in bale, or, in fact, to *old* rags at all, or had he shown that cholera had positively ever been conveyed by such merchandise across the Atlantic, he would have furnished your readers with intelligence of real value.

It would, on account of various items therein, be perfectly simple for me to insinuate that your correspondent was "furnished with the eye-glasses" of the Surgeon-General of the Marine-Hospital Service when he wrote his letter, but I prefer to suppose that, whether good or bad, the "glasses" are his own, and that he at least believes them to be respectable and honest ones.

I should not ordinarily notice a mere *personal* matter of this sort. But the insinuation I refer to touches a subject of such general public importance, is found in such good company, and is so directly aimed at the integrity of the publication I represent, that no choice is left me. Begging you to give this letter the same publicity which you gave that of your Washington correspondent, believe me,

Very respectfully yours,

GEORGE B. SHATTUCK, M.D.,

Editor of the "*Boston Medical and Surgical Journal*."

SILK vs. CATGUT LIGATURES.

68 WEST FORTIETH STREET, NEW YORK, December 6, 1884.

To the Editor of the *New York Medical Journal*:

SIR: In your issue of November 29th Dr. Waterman details his experience as to the absorption of silk threads in the tissues, and suggests their use for the purposes now served by the "animal ligatures" of catgut, etc.

He asks others to report their observation in the matter. Of course, the filament of silk drawn from the bowels of the silkworm is as truly an "animal ligature" as the twisted intestine of a sheep. That the waxed, hard-twisted, braided silken cord, which by capillary absorption carries the products of decomposition into the interior of a wound, should excite suppuration, like any other foreign body, is not to be wondered at. It does not prove that the pure silk thread, made aseptic and kept so, will not be absorbed.

It occurred to me to make a trial in October last, when I happened to have a suitable and willing subject. Having done the operation for lacerated cervix uteri, and the patient being still anesthetized, the outer surface of the thigh was well washed with a solution of mercuric bichloride, 1 to 2,000. A fold of skin was lifted, and three threads were drawn through its base and cut off close to the points of entry and exit. Needle and threads had been first washed in a strong solution of carbolic acid. These threads were two sizes of am Ende's surgical catgut ligature, and soft, white surgeons' silk, three strands loosely twisted together. When the fold of skin was released and had flattened down, about three quarters of an inch of each cord lay in the tissues, half an inch apart and completely covered in. The part was dusted with iodoform and covered with a carbolyzed India-rubber plaster. Four days after, the plaster was removed. Over each cord of catgut was a slightly elevated and slightly reddened ridge; over the silk a lesser ridge and no reddening. Four days later, the ridges were less marked over the catgut, and the color was yellowish; over the silk, no ridge

or discoloration. Ten days later, the parts had entirely regained their natural condition.

These experiments indicate that pure, aseptic, loose-twisted silk may replace catgut in interior sutures and ligatures. We have also learned that, for operations on the vagina and perineum, and, for the most part, the sutures in laparotomy, silk may to advantage replace silver or iron wire.

W. M. CHAMBERLAIN.

Proceedings of Societies.

NEW YORK SURGICAL SOCIETY.

Meeting of November 25, 1884.

The President, Dr. ROBERT F. WEIR, in the chair.

Leuchæmic Lymphomata.—Dr. C. K. BRIDGON presented a patient illustrating a disease which he thought it was impossible to distinguish from malignant lymphoma, the subject of the paper of the evening, except by examination of the blood. A married woman, twenty-three years of age, showed extensive enlargement of the cervical lymphatic glands on both sides, the disease having existed for nine months. The glands in the right axilla also were enlarged, but enlargement of the glands elsewhere had not been detected. There was some enlargement of the spleen. Examination of the blood revealed a large increase in the proportion of the white-blood corpuscles. The enlargement of the glands affected first one side of the neck and then the other. Dr. Bridgon thought that most of the German authorities recognized the fact that it was impossible to distinguish the soft variety of malignant lymphoma from leuchæmic lymphoma except by examination of the blood.

The treatment had consisted of the administration of Fowler's solution in gradually increasing doses, beginning with three drops. The patient had not been under observation long enough to secure the full influence of the remedy.

Excision of the Entire Tarsus for Tubercular Osteitis.—Dr. W. T. BULL presented a patient upon whom he had operated more than six months before for tubercular osteitis of the bones of the tarsus, and removed the entire tarsus, with the exception of the posterior rim of the os calcis, the compact tissue of the bone. The result had not been very satisfactory. The patient was an Italian, twenty-two years of age, without constitutional vice. He entered the hospital on the 17th of last March, when he gave a history of having suffered from stiffness, swelling, and pain in the ankle for fifteen months, which finally broke out into sinuses, and the disease completely disabled him. On examination, there was found carious bone; the general condition of the patient was very good, and there was no evidence of tubercular deposit in any other part of the body. He was anxious to have the foot amputated, but Dr. Bull thought he might be benefited by conservative surgery, and therefore operated in the manner indicated. The wound healed satisfactorily so far as general symptoms were concerned, under peat and iodoform dressings, and the application of plaster-of-Paris splints. At the end of four months, however, the discharge continuing, Dr. Bull scraped out the sinuses, and in about one month after this operation they were all healed. Since then they had broken out once or twice, but were now healed. He could bear weight on the foot at the end of three months, but with pain. At present the limb was one inch shorter than the other, the calf of the leg smaller by two inches, the circumference of the instep less by three fourths of an inch, and the heel broader by one inch than the opposite heel. The foot was in

good position, and there was considerable power of flexion and extension of the metatarsus. The patient walked, with a slight limp, upon a thick-soled shoe. He was working in a grocery store, but had pain enough at times to interfere with his work. It should be remembered that there was left behind a thin shell of the os calcis, through which one drainage-tube passed, and the continuance of pain might be explained by inflammation in this bone. It was possible that the functions of the foot might improve, as the man had had a proper shoe but a few days. Judging from the present condition, Dr. Bull was compelled to think that amputation at the ankle joint would have been a more rapid means of cure, since that would have given, with a good artificial foot, facility in walking. But the man was hardly in a position to provide himself with that luxury. Dr. Conner, of Cincinnati, had reported last year to the American Surgical Association two very favorable results after complete excision, and Dr. Bull had been stimulated, by a perusal of his very thorough paper on the subject, to try conservatism in preference to amputation.

Dr. Bull referred to another case, that of a married woman, twenty-five years of age, who had about the same condition of the tarsus, but there was, besides, evidence of disease of the tibia and fibula. He not only removed the bones of the tarsus, but sawed off the lower ends of the tibia and fibula, yet the patient was never able to walk at all except by the aid of artificial support, and the limb was finally amputated. He thought that the testimony afforded by these two cases was certainly not very satisfactory with regard to extensive resection of the bones of the tarsus.

Two Cases of False Joint (Esmarch's Operation) for Ankylosis of the Jaw.—The President presented two patients on whom Esmarch's operation had been performed for the establishment of a false joint in the lower jaw, on account of ankylosis. The first patient was a woman, thirty-three years of age, who, ten years ago, while cleaning windows, fell, striking her chin and the left side of the face on an iron bar. Much swelling followed, causing at first difficulty in closing the jaws, and subsequently inability to open them. At the end of a year she was compelled to subsist on fluid diet. In September, 1878, she entered St. Vincent's Hospital, where the cicatricial bands were divided and separated freely from the jaws, and the mouth was forcibly opened. In spite of wedges subsequently used, recontraction took place, as was commonly observed. In May, 1879, at Bellevue Hospital, the cheek was split open from the mouth, the bands were cut out, and mucous membrane was brought over the gaps. As a great deal of neuralgic pain was experienced after this, another section of the cheek was made, in March, 1880, without benefit. When she came under Dr. Weir's charge the separation of the jaws amounted to one quarter of an inch, and there were several strong internal bands stretching from one jaw to the other from the angle of the mouth outward. A slight motion was perceived. The cicatrix in the cheek was nearly at the posterior margin of the masseter, was, at its posterior part, exquisitely sensitive, and was the focus of severe and constant neuralgic pain. On January 29, 1883, by an incision over the lower edge of the bone, one inch and a quarter of the left side of the lower jaw was removed, starting from the second bicuspid tooth of that side, a slender cicatricial band being purposely left attached to the mental end of the maxilla, to act as a ligament for support. The painful cicatrix was at the same time dissected out. Complete relief followed the operation, and she was able to masticate readily within a week therefrom. Three months later a return of pain was felt in the mouth, supposed at first to be due to some carious teeth in the upper jaw, which were removed. It was, however, found to be due to the pressure of the distal end of the inferior maxilla, from the persistent

action of the pterygoid muscles. This portion of bone was eventually removed, and the patient had since been free from pain, and able to eat well. It was now more than three years since the final operation, the jaws opened to a normal width, and, thanks to the cicatricial band, which was preserved, the chin kept its median position.

Dr. Weir's second case was that of a boy of sixteen, who was admitted to the New York Hospital in October, 1882, having, nine years previously, received a lacerated wound over the left temporo-maxillary articulation, which resulted in obliteration of all motion in this joint. He had had his jaw opened two years previously, under an anæsthetic, by screws and presses, but the relapse was speedy. Dr. Weir removed a wedge-shaped piece of the lower jaw by an external incision extending from the second bicuspid tooth outward. The piece of bone removed measured half an inch along its upper and three quarters of an inch along its lower edge, and gave perfect freedom of motion. On the third day the boy was able to move the jaw freely. The opening of the mouth was now normal as to extent, though there was slight underlapping of the lower incisors. Lateral mastication was perfect.

Dr. L. S. PILCHER, in connection with the first patient presented by Dr. Weir, reported a method which he adopted in the case of a little child, four years of age, whose jaws were locked together firmly, as a result of cicatrices produced by extensive pytialism some years previously. There was a dense cicatricial mass which extended from opposite the canine teeth backward to beyond the molars, fastening the jaws together. Dr. Pilcher operated by making an incision from the angle of the mouth outward until he had divided the entire mass freely. He then dissected up the cicatricial tissue from the jaw, both above and below, and excised it. He then took a flap from the mucous surface of the upper lip, and, having turned it backward, planted it upon the surface exposed along the upper jaw, as the result of excising the cicatricial mass, and fastened it in position with sutures. He treated the lower lip in the same way, taking a flap from it, turning it back, and planting it upon the freshly exposed surface. He then brought the cheek together in such a manner that the edges of the mucous membrane of the flap above and below were nearly in apposition, and, as a result of it, there was a new mucous surface filling the space from which he had removed the cicatricial mass. There was promise of considerable relief from the original contraction. Most excellent union had taken place. It was perhaps a month since the operation was performed, and the child's condition was very satisfactory. The amount of recontraction which might take place was, of course, uncertain, but it had seemed to him that, with watchfulness and daily separation of the jaws, any slight tendency to recontraction, due to cicatricial tissue which might have been left in the excision, could be prevented. He mentioned it as possibly a method which might take the place of resection of the jaw.

Malignant Lymphoma.—Dr. PILCHER read a paper on this subject. [See page 663.]

Dr. H. B. SANDS thought that, in the absence of any histological information in one of Dr. Pilcher's cases concerning the nature of the morbid growth, and in view of the striking difference in the clinical histories of the two cases, there might be a reasonable doubt whether in both the character of the disease was identical. As he understood the term malignant lymphoma, it did not imply a peculiar abnormal structure, as was observed in carcinoma and sarcoma. The malignancy of the disease was characterized by its wide dissemination, and by the appearance of hyperplastic glandular tissue in some parts of the body where normally no lymphatic glands existed. He thought, therefore, it was fair to inquire whether the first of Dr. Pilcher's cases may

not have been one of multiple lymphoma, and the second one of lympho-sarcoma, which was a truly malignant affection, characterized by much more rapid progress than was usually observed in cases of multiple or malignant lymphoma.

Dr. PILCHER said that he had attached the word malignant to these cases rather with reference to the steady progress of the disease toward a fatal termination without being affected in its course by remedies. The peculiarity of the cases called malignant lymphoma consisted in these glandular enlargements in which nothing more was found than normal gland tissue, with fibrous and cellular elements—hyperplasia of the ordinary gland tissue. The second case he had reported with special hope that it might be criticised because of its obscurity, and it was only by association with the various symptoms and conditions present that he was able to reach any satisfactory conclusion concerning its exact nature.

Dr. BRIDGES thought the term malignant lymphoma had been attached to the disease not so much on account of the histological elements present as on account of the inveterate character of the affection clinically. He had never seen a case in which the disease ran its course in three or four weeks, and he should look upon the second case reported by Dr. Pilcher as one of glandular enlargement secondary to the ulcerative process going on in the buccal cavity.

NEW YORK ACADEMY OF MEDICINE.

(SECTION IN OBSTETRICS AND DISEASES OF WOMEN AND CHILDREN.)

Meeting of November 27, 1884.

Dr. ALEXANDER S. HUNTER, Chairman.

Anteflexion of the Uterus and its Associated Pathological Conditions; their Prevention and Treatment.—Dr. W. GILL WYLIE read a paper with this title, which was the continuation of a paper contributed by him to the "American Journal of Obstetrics" for September, 1883. After a brief summary of that paper, he proceeded to the consideration of the prevention of anteflexion. This depended upon its ætiology, chiefly reducible to defective general health during childhood, leading to insufficient and imperfect development of the genital organs. To counteract this tendency of puny children, they should have good food, fresh air, and opportunity for exercise, and their moral and mental surroundings should also be made wholesome. It was surprising how much could be done for delicate children by attention to hygienic details. Corsets, especially those which extended below the waist, certainly tended to displace the uterus, and might increase anteflexion. If it was begun at an early age, lacing was capable of doing great harm, of a character so insidious that it was not noticed at the time. Local treatment was hardly applicable as a preventive, for the condition was generally ascertained only when its effects began to show themselves.

It was usually on account of painful or irregular menstruation, or sterility, that curative treatment was sought for. If the menstrual derangement resisted general treatment, he usually began local treatment by inserting a small piece of borated cotton saturated with glycerin against the anterior lip of the cervix, crowding it backward somewhat in the vagina. This tended to form a ball which would press the cervix backward and lift the body of the uterus. The patient was to remove the cotton at the end of twenty-four hours, by means of a string attached to it. The glycerin softened the tissues, by reason of the profuse watery discharge it caused, thus improving the pelvic circulation, and it tended to relieve over-sensitiveness. The application was to be repeated two or three times a week, until a vaginal examination could be made without giving pain,

and the hot-water douche was to be used in the intervals. If there was any congestion or subacute inflammation in the tissues about the uterus, instead of using simple glycerin, the cotton was saturated with a mixture one part of alum, fifteen parts of glycerin, and enough carbolic acid to act as a disinfectant, generally about an ounce to the pint; and the wads were gradually increased in size. In two or three weeks it would be found that the vagina was larger and less sensitive; the cervix softer and less conical, and directed more backward; and the parametric tissues less sensitive and not so rigid as before. These results might require a longer time to bring about, especially where the disease had been of long duration. When they had been accomplished, the next step was to dilate the cervical canal with Sims's dilator, having previously sponged out the vagina with a 1-to-3,000 solution of bichloride of mercury. The instrument, if of the proper curve, could be introduced almost as easily as a sound. The blades should be spread to the width of about two lines. This sometimes would require considerable force in cases of long standing, and in some instances it caused intense pain, like that of menstruation. After withdrawing the dilator, the surgeon should pass a cervical protector up to the os internum, and through it pure carbolic acid should be thoroughly applied to the os internum by means of an applicator armed with cotton. As the speculum was removed, about twenty grains of powdered iodoform were to be blown against the cervix, and this would often relieve the pain at once. He had never seen this procedure do any harm after the proper preliminary treatment and the use of antiseptic precautions. It was generally best not to repeat the dilatation in less than a week, and two or three dilatations would usually be sufficient. It might be well to do the first one at the patient's home, so that she might rest in bed after it. The degree of dilatation should be increased each time, until the blades were separated to the extent of four lines. The dysmenorrhœa would then be found to be relieved, and in favorable cases the beginning of a permanent cure made. As to this, much would depend on the state of the general health.

Sometimes this treatment failed to cure sterility, although it might have put a stop to the dysmenorrhœa. It was then necessary to perform Sims's operation with his metrotome, which Dr. Wylie had made with blades so curved that they were easy of introduction. The blade was directed backward, and the posterior wall of the cervix was incised up to the os internum, and cut completely through for the lower half-inch or more, according to the amount of projection of the cervix into the vagina. He did not find it necessary to make an anterior incision, but trusted to dilatation to overcome all constriction at the os internum. For the plug, to be used afterward, he preferred one made of hard rubber. Even after making an anterior incision, according to his experience, the use of a dilator was necessary before a full-sized plug could be passed into the corporeal cavity, and unless it could be so passed, and unless it would stay there of itself when once inserted, the inference was that the end of the plug did not really extend beyond the os internum. To this failure no doubt many cases of want of success were to be attributed.

The author then described the details he employed, as to cleanliness, disinfection, etc., in the after-treatment, and added that the risk from this operation was very small, if due precaution was observed as to the proper preliminary treatment, and if care was taken not to divide the cervix too freely, and it was a very successful procedure. If the dilatation was only imperfectly done, of course the relief would be only temporary, but if it was done thoroughly, and repeated if necessary, a permanent cure would often result. Childbearing, however, was the best means of overcoming the deformity, and, that being the

case, early marriage was to be recommended for women so affected, as sterility was not so likely to be caused early as subsequently. Sponge-tents were more dangerous and less effective than mechanical dilatation, and graduated sounds, especially if they were nearly straight, were not to be recommended. The author was unable to see the advantage of bilateral division of the cervix. He was also, in general, averse to the use of pessaries for antelexion, especially stem-pessaries.

The paper closed with the following conclusions: 1. In a certain number of cases of marked anterior curvature no painful symptoms are produced. 2. Anterior displacements are the result rather than the cause of uterine disease, but they may intensify such disease. 3. The dysmenorrhœa is rarely due directly to the flexion, but the latter may aggravate the real causes. 4. Mechanical supports are only palliative, unless the cervix is dilated and complications are treated at the same time. 5. In most cases, imperfect development of the uterus is the fundamental lesion. 6. The general health, therefore, should be improved, and stenosis should be overcome.

NEW YORK CLINICAL SOCIETY.

Meeting of October 24, 1884.

Dr. J. WILLISTON WRIGHT in the chair;

Dr. W. DUNCAN McKIM, Secretary.

Empyema.—Dr. A. A. SMITH related the history of a case. The patient was a man, twenty-two years old, who, except for an attack of acute rheumatism at the age of six years, had always been well. December 18, 1883, after a supper of lobster salad, he went to bed feeling perfectly well. He awoke about 2 A. M. with a severe chill, accompanied with violent vomiting and purging, also pain in the left side. Dr. Smith saw him about three hours afterward. The chill had then passed off, his temperature was 103.5° F., the pain in his side was severe, and he was still vomiting and purging. There was also some delirium. It took nearly a grain of morphine, given hypodermically, to quiet the pain. In a few hours there were all the evidences of a pleuro-pneumonia, which ran the usual course, and in a week convalescence seemed to be fully established. On the eighth day he had a moderate chill, followed by fever and increased pain in the chest. The temperature now ran up to 105°. This was so unusual that Dr. Smith made frequent and careful examinations, and found within the next few days that the physical signs, which had been those of the third stage of pneumonia, were gradually giving place to those of pleural effusion. From the persistent and marked constitutional disturbance, it was suspected, also, either that some other organ was becoming diseased, or that the fluid in the pleura was not serum. The first week in January a hypodermic syringeful of pus was withdrawn. On the 15th, twenty ounces were removed with an aspirator, being as much as could be obtained. The patient then improved steadily; a year before, he had weighed 172 pounds, just before the attack 165, after the illness 125, and at the present time 164. The recovery after a single aspiration was of interest in view of the nature of the fluid. Probably the pus was sequestered.

Dr. E. G. JANEWAY mentioned a case of pleurisy with serous effusion on one side and purulent on the other, in which recovery had followed a single aspiration.

Dr. BEVERLEY ROBINSON thought it generally advisable to tap once or twice before resorting to incision.

Dr. L. EMMETT HOLT raised the question whether it was not better to make frequent aspirations than to remove the whole of the fluid at once. He had lately been experimenting in the matter, withdrawing about five or six ounces at short intervals.

He was careful to disinfect the needles thoroughly, and in no case had suppuration been caused by this frequent aspiration.

Dr. JANEWAY was accustomed to let the flow continue until the patient showed signs of distress.

The CHAIRMAN had seen several alarming cases of dyspnoea after withdrawing a large quantity of fluid, such as a pint.

Dr. SMITH thought that the mere withdrawal of a syringeful for diagnostic purposes, often seemed to hasten absorption when the fluid was serous.

Pleurisy with Effusion; Superficial Gangrene.—Dr. W. H. KATZENBACH read the notes of the case of a woman, sixty years old, subject to attacks of acute intercostal neuralgia, who was attacked on the 3d of October with severe pain in the left side. A hurried examination failed to reveal any intra-thoracic trouble. An opiate was ordered, and the patient was requested to summon him the next morning if relief was not obtained. He was not called until the 8th, and he then saw her at 4.45 P. M., when she was propped up in bed, groaning with pain, and presenting an extremely anxious expression. Her face was pale, the surface was bathed in perspiration, the finger-nails were blue, and the pulse was rapid and weak. Physical examination revealed flatness over the whole left chest, and displacement of the heart to the right of the median line. Two thirds of a grain of morphine, given hypodermically, relieved the pain. Through the night the pulse remained rapid and weak, but hypodermic injections of brandy and black coffee, and brandy by the mouth, increased its force. At 11.30 A. M. on the 9th the pulse was 140, the respiration 26, and the axillary temperature 100° F. At 4.45 P. M. the pulse was 138, the respiration 26, and the temperature 100.5°. On the 13th the chest was aspirated, and fourteen ounces of yellow serum were withdrawn. The operation was attended with no discomfort, and was followed by considerable relief.

About this time a gangrenous sore appeared over the coccyx, from which foul sloughs were separating at present. The pleurisy was clearing up, and to-day there was no evidence of fluid in the cavity. The patient had not been in good health through the summer, and to that fact, in addition to the attack of pleurisy, the sore was attributed. It was not due to pressure, for she had never been able to lie on her back.

The points of interest were, the occurrence of acute pain while the effusion was at its height, and the gangrenous sore in the locality mentioned.

Photographs of the Larynx.—Dr. D. BRYSON DELAVAN showed some photographs of the larynx, taken by Dr. Thomas R. French, of Brooklyn, and stated that attempts at laryngeal photography had been made by Czermak, twenty years ago, and by Lennox Browne, three years ago, but that Dr. French was the first to succeed in photographing the larynx without including the mouth or the fauces. This, Dr. Delavan thought, would constitute an era in the study of the physiology and pathology of the larynx.

Dr. ALLAN McLANE HAMILTON presented a photograph of a hand, that of a patient with progressive arthropathy.

Dr. DELAVAN then read an account of the Copenhagen meeting of the International Medical Congress.

NEW YORK ACADEMY OF MEDICINE.

Meeting of December 4, 1884.

The President, FORDYCE BARKER, M. D., I. L. D., in the chair.

A Donation to the Library.—Dr. HUDSON, of the Library Committee, presented over fifty volumes of medical works, given to the library by Dr. C. R. AGNEW.

Nominations for Office.—The PRESIDENT said that he wished

to preclude any possibility of his being renominated for the presidency by saying (however delicate it might be to make the statement) that he would have to absolutely decline to accept the nomination, as it would be impossible for him to discharge the duties of the office if he were elected. It was only under urgent circumstances that he had been persuaded to accept the office during the past term, and he must positively refuse to allow his name to come before the Academy again.

Dr. AGNEW briefly recounted the important services rendered the Academy by Dr. SAMUEL T. HUBBARD, and said that he knew of no one among the fellows who was more entitled to their suffrages to succeed the present honored President. He therefore nominated Dr. Hubbard for the office of President.

Dr. ABRAHAM JACOBI, Dr. W. T. Lusk, Dr. T. G. THOMAS, and Dr. AGNEW were also nominated for the office of President.

For the Vice-Presidency, Dr. C. C. LEE and Dr. T. A. EMMET were nominated.

Dr. II. T. HANKS declined a renomination. For the office of Corresponding Secretary, Dr. P. F. MUNDE, Dr. H. KNAPP, and Dr. L. ELSBERG were nominated. Dr. W. M. CARPENTER declined a nomination.

For the office of Trustee, Dr. A. L. LOOMIS, Dr. J. W. WRIGHT, Dr. E. ELIOT, and Dr. F. H. HAMILTON were nominated.

For members of the Committee on Admission, Dr. W. M. McLAURY, Dr. S. D. POWELL, Dr. A. S. HUNTER, Dr. C. A. LEALE, Dr. L. ELSBERG, and Dr. J. A. WYETH were nominated.

For members of the Committee on Education, Dr. J. D. BRYANT, Dr. F. R. STURGIS, and Dr. S. SMITH were nominated.

For members of the Committee on Medical Ethics, Dr. A. HADDEN, Dr. A. S. HUNTER, Dr. T. G. THOMAS, Dr. T. E. SATTERTHWAITE, and Dr. A. H. SMITH were nominated.

For members of the Committee on the Library, Dr. HUDSON and Dr. G. M. LEFFERTS were nominated.

Is the Operation of Tracheotomy in Diphtheritic Croup dangerous?—When should the Operation be performed?

—Dr. JOSEPH E. WINTERS read a paper with this title. The opinion that tracheotomy was a dangerous surgical operation he believed had no valid foundation, and should not be accepted with the confidence with which it seemed to have been received in this hall in March last. He quoted from Mr. Holmes, who represented the operation as a very dangerous one, but said that in one of Mr. Holmes's three fatal cases death was due to what would be called a too nimble tracheotomy, and in another complications arose from inserting the tube into the cellular tissue outside of the tracheal opening, and he regarded comment upon Mr. Holmes's tracheotomies as unnecessary. Professor Gross, in one part of his work on "Foreign Bodies in the Air-Passages," expressed his opinion of tracheotomy in the class of cases coming under the subject of the paper as very dangerous, and yet quotations elsewhere from the same volume showed that the author was contradictory in his own statements on this point, and it nowhere appeared in this work that he had ever performed tracheotomy for diphtheritic croup. Billroth, some years ago, at a time when there was no evidence that he had performed tracheotomy for diphtheritic croup more than a dozen times, had expressed an opinion that the operation in these cases was a dangerous one, but there was nothing in his more recent writings which would indicate that he any longer entertained this view.

The author quoted from numerous writers on the subject of tracheotomy, particularly for diphtheritic croup, some of whom had lived in ancient, some in modern, and some in quite recent times, and most of the quotations went to show that tracheotomy in diphtheritic croup was not a dangerous operation. Trousseau had performed the operation two hundred times without a single accident, except in one case in which the patient died as soon as an incision through the integument had been made.

Bretonneau did not speak of the operation as a dangerous one, nor of skill in its performance as necessary to success. Barthéz did not regard the operation as dangerous; and a quotation to the same effect was made from West, Meigs and Pepper, and others. Dr. Winters did not regard the entrance of a small quantity of blood into the trachea as dangerous; on the contrary, many operators recommended that a little blood be allowed to enter the trachea in order that violent cough might be induced, which would expel viscid mucus and fluids.

The operation of tracheotomy in itself not being dangerous, nothing connected with its mere performance should deter us from resorting to it when it was indicated. In a large proportion of cases of diphtheria which terminated fatally, death was due to obstruction of the passage of air into the lungs, and the object of tracheotomy was to overcome this difficulty. When the operation failed to save life, generally the reason would be found to lie in the fact that it had been postponed too long, in complications existing in the bronchi or lungs, in sudden collapse, in asthenia, or in want of careful after-management. Suppuration in the anterior mediastinum, erysipelas and gangrene around the wound, and slipping of the cannula into the tracheal opening, had very seldom occurred. Writers did not speak of diphtheria of the tracheal wound as taking place often. As to the influence of the operation on the cure of croup, the admission of air into the lungs through an artificial opening into the windpipe secured for the diseased larynx entire rest, and thus led to a suspension of the diseased action there. In cases in which the patients had died from other causes than asphyxia some time after the operation had been performed, the pseudo-membrane was found to have disappeared from the larynx; but, in cases in which death had taken place within a few hours after the operation, the membrane still existed. It therefore appeared that, in cases in which patients got well after tracheotomy, the restoration of the larynx to a healthy condition was rapid. The diphtheritic process stopped at the level of the vocal bands more commonly than was supposed, and, when it extended into the larynx, trachea, and bronchial tubes, it was by direct propagation from above downward, and not by simultaneous affection of the entire air-passages. If tracheotomy for diphtheritic croup was not dangerous; if it met the complication of obstruction to the entrance of air to the lungs, and was promotive of cure of the affection; if the specific disease was not aggravated by the operation, and the false membrane very rarely developed at the wound, the operation certainly brought with it no added element of danger, and the next subject which would come up for consideration was that of delay in its performance. The author then quoted from Trousseau and others, to show that a considerably larger proportion of patients upon whom the operation was performed recovered than of those who did not receive its benefits. He could not conceive of a case in which delay would not be dangerous. We could gain nothing by delay, while the success of the operation would be largely interfered with. When the rima glottidis was obstructed, less air entered the lungs, with every inspiration the lungs became less expanded, the circulation of the blood became embarrassed, imperfect oxidation produced violent constitutional disturbance, the entire body became cyanosed, passive congestion and oedema occurred in the respiratory organs, and yet it had been advised that these immediate precursors of death should be allowed to appear before resorting to tracheotomy! One might with equal propriety postpone the operation for strangulated hernia until after the development of gangrene. In the majority of cases of croup the patient died of want of oxygen; the object of tracheotomy was to render oxygen accessible to the lungs, and every breath of air which the child could take tended toward a cure; we should not, there-

fore, wait until the patient's strength had been exhausted in gasping and struggling for breath before resorting to tracheotomy. He would resort to the operation as soon as ipecac and other ordinary remedies had failed to produce relief. The tender age of the patient should not contra-indicate the operation, but rather—as in these cases the disease advanced with much greater rapidity, and as there was greater liability to bronchial and pneumonic complications—the operation should be resorted to earlier.

Early age, previous ill-health, especially chronic catarrh, and bronchial and pulmonary changes, made the prognosis more serious, as did also measles, scarlet fever, and nasal diphtheria. When croup came on very early in the disease, making its appearance suddenly and producing marked obstruction, the prognosis was more serious. When the glands of the neck were much enlarged, the operation proved less generally successful. It was an unfavorable sign if the breathing did not become perfectly free and regular after the operation, as it indicated some obstruction below the artificial opening.

The after-management was more important than the manner in which the operation was performed. Careful attention should be given to removing any obstruction to the cannula, the patient's powers should be sustained by proper food and stimulants, measures should be adopted for subduing local processes, and attention should be given to the temperature and moisture of the room.

The general practitioner should not, in a case of threatening strangulation from croup, search for a surgeon to open the trachea, but should proceed to perform tracheotomy himself without any delay.

The following were some of the conclusions which the author had reached: 1. Tracheotomy of itself, performed with care, involved little, if any, danger to life. 2. Accidents during the operation generally resulted from want of care. 3. It prevented asphyxia, and thus gave more time for the administration of remedies and to enable the system ultimately to throw off the disease. 4. It prevented laborious and rapid breathing, thus tending to prevent exhaustion. 5. It allowed of a free supply of air, and thus assisted in curing the original malady. 6. It was a simple resource by which the condition of the patient was not likely to be rendered worse. 7. Having made a diagnosis, we should not delay the operation, as this was the chief cause of failure in unsuccessful cases. 8. We should operate slowly, deliberately, and without hurry, and not lay open the windpipe at one sweep of the knife. 9. It was seldom that either the constitutional condition or special causes contra-indicated the operation. 10. It alleviated suffering. 11. It mitigated symptoms. 12. It prevented complications. 13. It never added dangers to the original disease. 14. Statistics showed that nine tenths of the patients requiring the operation were suffocated without it. 15. No patient who had lived without the operation would have died had it been performed. 16. The dictates of conscience, of facts, and of common humanity united in demanding the operation.

Dr. J. WILLISTON WRIGHT had never regarded tracheotomy as specially difficult. He was well aware, however, that, undertaken, as it frequently was, in the middle of the night, in a tenement house, by the light of a tallow candle or a kerosene lamp, and with such assistance as one could obtain under those circumstances, it was an operation which almost all surgeons approached with some sense of misgiving, especially as it was usually called for in the case of a young child having a short, thick neck and a deep trachea. These difficulties, however, were not so great but that they might all be surmounted when they were taken in hand by a man who understood anything of surgery, and had a cool head and a steady hand. The incision itself was

certainly a very simple one. The veins of the neck, if wounded, frequently bled profusely, and, if the operator was impressed with the hæmorrhage which was going on, and undertook to stop it entirely, as was inculcated by many authorities, before opening the trachea, he would probably have a job which would occupy the remainder of the night. If the case was not urgent, it might be proper to stop some of the hæmorrhage, even supposing it to be simply venous. Arterial hæmorrhage, if the incision was made properly, was seldom a troublesome complication in his experience. If, on the other hand, the case was one of emergency, where the great object was to make an opening into the trachea as quickly as possible, his custom was always to ignore this venous hæmorrhage, and cut into the trachea, feeling very certain, as the reader of the paper had stated, that hæmorrhage would usually stop as soon as the trachea was opened and the tube introduced. As to the entrance of blood into the trachea, he had regarded it as a matter of no special importance. It had, on the contrary, seemed to him sometimes to be the very thing which was needed to stimulate violent expulsive efforts, which would rid the trachea not only of the blood, but also of a quantity of mucus. On the adult he regarded tracheotomy as one of the simplest operations in surgery. In the young child it was much facilitated by placing under the back of the neck a common wine-bottle wrapped in a napkin, allowing the head to hang over it so as to render the trachea as superficial and prominent as possible. With regard to the isthmus of the thyroid gland, in operating in urgent cases, in which saving time was the great element, he would be inclined to ignore it altogether, cutting through it with the knife. If time was not an important element, and the gland was in the way and contained a large vessel, he would, of course, take the precaution to surround it with a ligature at each side and divide it between them, as had been indicated by Dr. Winters. As to the time when tracheotomy should be performed, he thought that, in order to be of much service, it should be done early. He did not think that the operation itself was in any sense a cause of death in membranous croup or diphtheria of the larynx. He was so strongly convinced of the importance of the operation that, if it was indicated, and no surgeon was at hand, he would perform it upon himself with a pocket-knife, and the aid of a hand-mirror.

Dr. A. JACOBI said that much had been written upon the subject by different writers, and Dr. Winters doubtless had recognized that it would be impossible to cover the entire ground in a single paper; that being the case, Dr. Jacobi would limit his remarks to some points brought out in the paper, and would not try to discuss the entire subject. The author had quoted extensively from European writers, both ancient and modern, with the principal object of showing that tracheotomy was not a dangerous operation, while but very limited reference had been made to American writers, some of whom, as Dr. Day, Dr. Hadden, Dr. Ripley, and others, had written papers containing much useful information upon this subject. With regard to the dangers of tracheotomy, he thought the principal one was a bungling operation, and by that he meant a bloody operation. Hæmorrhage was often due to the operator trying to get through with the operation as soon as possible. Tracheotomy should be performed deliberately, and the isthmus should not be cut through if the operator had as much as two or three minutes' time to spare. Many years ago he had lost a patient from hæmorrhage by cutting directly through the isthmus into the trachea. The child did not cough up all the blood which had been allowed to enter the trachea; even in a vigorous patient some of the fluid would be expelled ten, fifteen, or twenty minutes after the operation, and perhaps some of it would never be thrown up. Blood in the bronchi would have the same influ-

ence which so much viscid mucus would have, namely, to prevent the passage of air into the air-cells, which would cause them to contract and the blood-vessels to dilate, producing congestion and broncho-pneumonia. Another cause of danger was failure to administer chloroform. He preferred chloroform to ether because the child could be brought more quickly under its influence. He knew of cases in which babies had died from struggling in the arms of the nurse, who had taken them out of bed to make a simple nasal injection.

At what period in croup should the operation be performed? He was certainly of the opinion that after a diagnosis had been made we ought not to wait. He would not limit the operation to cases of membranous croup, but would also resort to it in those cases of laryngitis accompanied by stenosis of a congestive and oedematous type. He objected to dividing croup into stages in these cases, inasmuch as in some instances the operation was indicated quite early in the disease. He would operate in any case in which there was considerable laryngeal stenosis, recession about the supra- and infra-clavicular and ensiform regions, particularly if these symptoms increased in the morning; and, if the pulse was becoming frequent and irregular, he would say it was high time to operate. He would not ask in such a case whether there was membranous obstruction. Could we do anything in cases in which there was constitutional diphtheria, or diphtheritic sepsis? He would reply, Most decidedly. He would operate in these cases particularly, because as soon as the trachea was opened the child would cease to breathe the poisonous and fetid odors coming from the larynx and the nose.

Dr. Jacobi then directed attention to the use of bichloride of mercury for the prevention of the necessity of tracheotomy in croup. As to the causes of death after tracheotomy, they might be the same as those which would have caused a fatal result had the operation not been performed, but the principal causes of death after the operation were broncho-pneumonia, œdema of the lungs, and descent of the diphtheritic process.

Dr. J. LEWIS SMITH said that the older the child, other things being equal, the less the danger after tracheotomy. It seemed to him that there were two conditions in which tracheotomy was specially dangerous, one of which was that in which the patient was nearly moribund, and the surgeon was induced to operate hastily without due precautions against hæmorrhage. He thought that in the city, where assistance could always be had, the physician should not undertake the operation alone; but assistance might not always be accessible in the country. He fully agreed with Dr. Jacobi that the degree of laryngeal stenosis, and not necessarily the presence of pseudo-membrane in the larynx, should govern us in performing the operation. He would divide cases of membranous croup into two classes as based upon the necessity for an early or a later operation. If the laryngeal pseudo-membrane in diphtheria developed early it would be found to form more rapidly than if it developed, say, at the end of a week, and tracheotomy should be performed immediately; but in the other class of cases the membrane developed more slowly, and there he would try to prevent the necessity for tracheotomy by first using alkaline inhalations, or inhalations of trypsin, and by the internal administration of mercurials. *Tubage* had been employed with some success in the New York Foundling Asylum.

Dr. J. H. RIPLEY said that the author's ideas regarding the dangers of the operation, its difficulties, and its consequences, especially the consequences of a late operation, were all opposed to his own views. The question was not whether tracheotomy was a difficult or dangerous operation, but whether tracheotomy in young children for croup was a difficult and a dangerous operation. So far as the operation of tracheotomy in general was concerned, Dr. Ripley would say that it was neither very diffi-

cult nor very dangerous. The danger consisted, first, in the condition of the child, and, second, in the necessity for doing the operation within a given time. Dr. Winters, he believed, had touched upon only one danger, namely, hemorrhage. Dr. Ripley did not regard hemorrhage as the most common cause of death. We had to deal with children suffering from systemic poisoning and stenosis of the larynx, with the cellular tissue of the neck infiltrated with the products of inflammation, sometimes swollen out even with the chin, and, in order to get at the trachea, we had to cut down perhaps two inches, which required a good deal of time and a good deal of care, and, before the operation was completed, the child was liable to die of syncope; if the stenosis was great, and chloroform was given, the child was liable to die of apnoea; if chloroform was not given, the child would die from struggling. He was willing to go with the small minority, which included such names as Holmes, Gross, and Billroth, and say that he regarded the operation as dangerous. He had performed tracheotomy about one hundred and ten times, and had seen it done by other men about fifty times. He had witnessed all kinds of complications, and thought he had been the means of saving several lives by being present when inexperienced persons were operating. He had known ten deaths occur on the operating-table, the operations being performed by seven men, four of whom were careful and experienced surgeons. He knew of one instance in which the operator plunged the knife into the spinal column, in another it was plunged into the oesophagus, and in a third it was plunged quite through the trachea at one side of the median line. Dr. Winters had advocated early operations, but, as Dr. Ripley had before said, the man who operated early would have the best success, not for the reasons given by the author, however, but for the reason that unnecessary operations were those which were, as a rule, done early. We often had to watch the case closely for two or three days before a differential diagnosis could be made. It was true, as Dr. Jacobi had said, that there were a few cases in which it was necessary to do tracheotomy for stenosis occurring in the course of laryngitis. There were also certain cases of croup which would recover without treatment, and hence it was that there had been so many specifics for this disease. If late operations were the cause of death, then the causes of death must be those which Dr. Winters had spoken of—pneumonia, extensive bronchitis, infiltration of the lungs and of the bronchi—but Dr. Ripley thought that, if any fact in scientific medicine could be demonstrated, it was that incomplete stenosis of the air-passages above the air-cells produced not congestion of the lungs, but anæmia. The air-vesicles were in a state of acute emphysema, and, if this was true, delayed operations would not prove dangerous on account of broncho-pneumonia which was liable to follow. The causes of death, according to his observations, were, extension of the membrane into the bronchi and consequent suffocation, nephritis and uræmia, and respiratory and cardiac paralysis. He did not know that carbonic-acid poisoning would cause an extension of the membrane into the bronchi.

Dr. WINTERS, in closing the discussion, said, with regard to danger from blood entering the tracheal wall during tracheotomy, that such danger could be absolutely avoided by properly performing the operation. The scalpel should be laid aside after the integument was cut, not to be used again until the tracheal cartilages had been laid bare by careful dissection with two pairs of forceps, dividing any tough bands with dull scissors. He thought the views of Dr. Jacobi regarding the dangers of blood entering the bronchi were those first advanced by Niemeyer many years ago, that they were not accepted by advanced pathologists at present, and that they were abandoned by Niemeyer himself before his death. If any blood entered the

trachea it should be removed, together with whatever mucus might be present. He had not supposed that there was any question of the propriety of using an anæsthetic in tracheotomy for croup, nor as to a choice between chloroform and ether. Another reason, in addition to those offered by Dr. Jacobi for preferring chloroform to ether, was, that the latter was irritating to the air-passages. As to bichloride of mercury, he did not believe that it could be introduced into the blood in sufficient quantity to act as a germicide or as an anti-fermentative. The only influence which it exerted was as a tonic, and for this purpose it would never supersede iron. He did not believe that any autopsy had ever tended to show that tracheotomy had caused an extension of the diphtheritic process into the lower air-passages, and, in those instances in which the membrane had been found in the bronchi after tracheotomy, death had taken place too soon for the membrane to have developed after the operation. As to *tubage* of the larynx, it had been mentioned by Hippocrates, and had been at one time resorted to considerably in France, but had been entirely abandoned. Deaths on the operating-table were due either to delay or to carelessness. Dr. Ripley's statement that stenosis of the air-passages above the air-cells would not produce congestion, with its results, would not bear examination. Any one familiar with the physiology of the circulation knew that as soon as there was embarrassment of the respiratory act there was embarrassment of the circulation in the lungs, which caused damming back of blood upon the heart; with lack of aspiration-force from inspiration there was stagnation of the blood in the blood-vessels, and post-mortem examinations in croup showed passive congestion, the accumulation of mucus in the bronchi, pulmonary collapse, and, a little later, congestion of the lungs, pulmonary oedema, and the changes of broncho-pneumonia. Dr. Ripley had also spoken of croup being analogous to asthma and emphysema, but they were not analogous conditions at all. He had found but a single case recorded in which it was maintained that there existed a certain amount of emphysema the result of laryngeal obstruction in croup, and in that case it would appear the autopsy had not been made with care.

Dr. LOUIS ELSEBERG wished to say that Professor Gross had only taught that tracheotomy under the circumstances in which it was sometimes necessary to perform it, and not the ideal operation, was not always free from danger. He heartily coincided with the general views expressed in Dr. Winters's paper.

CLINICAL SOCIETY OF THE

NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL.

Meeting of November 22, 1884.

Dr. WILLIAM A. HAMMOND in the chair.

[From notes furnished by the Executive Committee.]

Functional Dyspepsia was the subject of discussion for the evening. Dr. A. H. SMITH spoke as follows:

In opening this discussion you will not expect me to give a lecture on dyspepsia. An attempt to do so would occupy the whole evening. Besides, the object of a discussion such as this is to bring out the personal views of the speakers, based upon their personal experience and observation. You will pardon me, therefore, if I do not take up the subject in regular order, but simply present such points as have impressed themselves most strongly upon my own mind, and I hope that those who follow will pursue a similar course, so that we may have as the result of this discussion the personal views of the members rather than citations of authorities. If we follow the successive steps of digestion, and imagine an aberration of the process at

each, it is easy to see that we may picture to ourselves as many forms of dyspepsia as there are organs employed in digestion. But this method is more readily followed in the library than in the consulting-room, and has more the flavor of *a priori* theoretical speculation than of clinical observation. Indeed, I question whether, setting organic disease aside, the functional disturbances are so limited to single organs that we can speak with any precision of gastric, hepatic, duodenal, pancreatic dyspepsia, etc. Practically we have two principal forms of dyspepsia, one for which the habits of eating are responsible, and another in which the digestive organs are really at fault. Thousands of dyspeptics suffer because they will persist in eating improper food, or food improperly prepared, or in eating too much, or too rapidly, or when the system is not in a condition favorable to digestion. In these cases there is no actual disease: the organs simply refuse to go beyond their normal function. But the continued operation of this cause will ultimately so derange the whole system as to result in the second form of dyspepsia, in which the legitimate duty of the digestive organs can no longer be performed.

The facts concerning the first form are so familiar that it is not necessary to dwell upon them. When the patient will learn to eat moderately and slowly of plain food properly prepared, and not to incur excessive fatigue during digestion, he will be practically cured. The second form, however, presents to us a somewhat complex problem, the key to which, I think, is to be found in the early establishment of a "vicious circle." The digestive organs hold a peculiar position in the economy. It is through them that the whole system receives its nourishment, and a failure on their part brings about a derangement of every other function to a greater or less extent. At the same time, as a part of the general system, the digestive organs are dependent upon the thoroughness of their own work for their own support and for the means of carrying on their own function. They can no more elaborate normal and efficient digestive fluids from impoverished blood than the nervous or the muscular system can do efficient work when suffering from a lack of proper nourishment. But the penalty for not properly elaborating such fluids is a further deterioration of the blood from which they are to be elaborated, and thus a vicious circle is at once formed. Indigestion produces imperfect nutrition; imperfect nutrition aggravates indigestion. This circle once established, the unaided powers of nature may be unable to break it. But if we can by any means do artificially some part of the duty which belongs to the digestive organs, or if, on the other hand, we can improve the quality of the blood without calling upon the digestive organs, we may so far break in upon the circle that nature can do the rest. Our efforts in the first direction take the form of supplying artificially the fluids and ferments required in digestion. Thus, we give pepsin* and hydrochloric acid to represent the gastric juice, and pancreatin and diastase to supply the deficiencies of the pancreas, etc. In the other direction, that of improving the quality of the blood without calling upon digestion, we act by means of nutritive enemata, or in extreme cases by transfusion. The efficiency of the first of these measures will surprise those not familiar with its use. A few injections of nutritive material into the bowel will often give an astonishing impetus to stomach digestion and enable it to regain its lost ground and thereafter to keep abreast of its work.

It is not to be forgotten, however, that digestion has a rival

force with which it has always to contend, viz., fermentation. So long as the digestive fluids are present in normal quantities and of proper quality, fermentation is kept in abeyance. But, the moment there is a failure in either of these respects, the vital process is mixed up with the chemical one, and fermentation products, which rightly have no place in the digestive tract, make their appearance, to delay digestion and to distress the patient. Slow digestion, from whatever cause, is certain to have this result. Hence, in these cases our efforts should be to hasten digestion, first, by appropriate hygienic means, and, secondly, by the use of artificial digestive agents. The action of these may be aided by certain medicines which have been found to act as digestive stimulants, such as the bitter tonics, which probably act through the nervous system. Direct stimulation of the gastric mucous membrane seems to favor digestion in some cases by inviting more blood to the glandular structures. Hence, the use of condiments or of a small quantity of alcohol with the meals is sometimes indicated. Some of the benefit which is unquestionably derived from drinking hot water may be explained in this way. Hot water is also useful in a class of cases in which there is gastric catarrh, and the inner surface of the stomach is coated with a tenacious mucus, which prevents the necessary contact of the ingesta with the mucous membrane. In these cases *lavage* sometimes gives excellent results. But, at the same time that we are hastening digestion, we may delay fermentation. A great many agents are used for this purpose, but the most convenient and efficient are, in my experience, boric and salicylic acids. Sodium salicylate is readily decomposed by the acids in the stomach, and its acid rendered active as an acid ferment. It has the advantage over the uncombined acid of being less irritating and more readily taken, and in acid conditions of the stomach the alkaline base is useful. Carbolic acid in small doses will act well, but has the disadvantages of being very disagreeable to many patients and of occasionally producing poisonous effects.

Dyspeptic patients are apt to drop one article of diet after another on account of some fancied disagreement with the stomach, until at last the bill of fare is reduced to a very limited number of articles, and these, very likely, such as the patient does not relish. In most cases it will be found that many articles have been discarded on very insufficient grounds, and may be restored to the diet list with great advantage to the patient. Often it will happen that a fair meal, even if almost forced down, will be followed by a better appetite at the next meal-time, the glands and the stomach having received in the mean time the benefit of being more fully nourished. Thus, while one class of dyspeptics should be directed to eat less, another class should be urged to eat more. A celebrated doctor of divinity, in this city, who was the victim of dyspepsia during his early life, says that he cured himself by "bullying his stomach," and there can be no doubt that a little discipline of this kind may often be of use. Out-door exercise is essential in every case, and, if it can be had, will often supersede the necessity for other treatment. Who ever knew a dyspeptic letter-carrier? Dyspepsia is more likely to receive too much rather than too little treatment. Encouraging the patient to eat a variety of food and to be much in the open air, with such occasional assistance from drugs as may be called for by the special indications, will generally effect a cure. Very obstinate cases are likely to have an organic lesion at the bottom, often atrophy of the gastric tubules.

Dr. STEPHEN S. BURT said: The near relation that exists between the stomach and the heart naturally suggests itself in connection with this discussion. For it is a matter of daily observation that sufferers from dyspepsia almost invariably refer to the heart as the cause of their trouble. This is so commonly

* Pepsin, to be of appreciable service, should be given in large doses. When we consider the great quantity of gastric juice that is secreted daily, and that nearly two per cent. of this is pepsin, the futility of five-grain doses is apparent.

the case that, when a patient complains of pain about the heart, palpitation, shortness of breath, and heartburn, followed by the assertion that he has heart disease, it is quite safe to assure him that such is not the case, provided he has not already been told by a competent examiner that he has organic disease of the heart. His shortness of breath will be found, upon further questioning, to be due to the difficulty he has in taking a deep inspiration, which is lessened rather than increased by exercise. The pyrosis, justifying its common name, heartburn, will very likely have caused apprehension also by directing his attention to the wrong viscera. All these symptoms can be removed by treatment directed to the stomach and to the intestines. But a patient with dyspepsia will not receive justice at the hands of his physician if a chemical examination of his urine and a physical exploration of his heart are neglected. For, while complaint is made of the heart in cases of simple dyspepsia, it may not be so well known that indigestion with flatulence of the stomach and of the intestines is one of the early results of an alteration in the blood and its circulation, not only in disease of the kidneys, but also in organic lesions of the heart. Long before there is any evidence of a compensation of the heart muscle, begins the venous congestion, which, among other ways, manifests itself by disordered digestion. And it is to this especially that I would direct attention, as treatment of a dyspepsia may prove unavailing if such a cause exists unrecognized; but, if it is known, on the other hand, an addition of from five to ten minims of the tincture of digitalis to an otherwise properly selected mixture for dyspepsia will result most satisfactorily.

Dr. W. H. PORTER stated that, of a thousand patients treated in his department of the school, fifty having been diagnosed as having dyspepsia, only four of the fifty had pronounced gastric symptoms. A large number had hepatic symptoms, headache, vertigo, chronic constipation, clay-colored stools, which, to him, would indicate hepatic indigestion as the primary cause of the dyspepsia. The speaker thought that, excepting in dyspepsia from improper food, the stomach itself was seldom primarily at fault. In sixty per cent. of these fifty cases there was an acquired or inherited specific taint. He improved these patients by remedying the constipation and treating the constitutional troubles. The speaker was acquainted with a gentleman who had been a dyspeptic for ten or fifteen years, who had learned to use the stomach-tube himself, and washed out his stomach whenever anything disagreed with him. At the end of six months of this treatment he was well.

Dr. M. P. JACOBI had used irrigation in two cases with very different results.

CASE I was that of a woman of fifty-five years, who had suffered from dyspepsia for eighteen years, and was much emaciated. By the carbonic-acid test, effected by giving separately the components of a seidlitz powder, so that the gas should be liberated in the stomach, this was found markedly dilated, extending below the umbilicus. This patient was able to receive into her stomach twenty-eight ounces of warm water, plain or alkaline, without discomfort. Vomiting was never excited by it, but the fluid was withdrawn by the pump, bringing with it a varying amount of viscid mucus. When plain water was used the entire amount injected was returned; but, with alkaline injections, from one to six ounces were always retained, as if they had been rapidly absorbed. The treatment, during steady application for a month, had thus far effected no marked change in the condition of the patient.

CASE II was that of a younger woman, about forty-eight. Her dyspepsia dated back only seven years, but dilatation of the stomach was demonstrated to exist. The patient did not suffer constantly, like the first one, but was subject to crises, which almost resembled the gastric crises of locomotor ataxia. In these she would vomit incessantly for two days, suffering at the same time from some epigastric pain, headache, and fever. In May this patient was restricted almost entirely to

liquid diet, using Leube's meat solution. She also used milk with Mellin's food and rusk. During the summer she was in quite good health, but in the autumn the crises of acute gastric catarrh reappeared. Toward the close of one of these crises, but while the digestion was still entirely disordered, irrigation was resorted to for the first time. There was great difficulty in introducing the tube, on account of the spasm of the pharynx, and, after a few ounces of water had been thrown into the stomach, it would be immediately ejected through the tube. The fluid was never either siphoned or pumped out, but always vomited in this way. This circumstance indicated a degree of irritability of the stomach which contrasted markedly with the atony of the first case, in which the mucosa was probably much atrophied. Notwithstanding the unpleasantness of the operation, the pain and discomfort were at once decidedly relieved. The washing was performed three times, at intervals of three days, and by this time the patient was feeling so well that the treatment was interrupted. Two weeks later she had continued to be perfectly well, and had commenced the use of solid food. She had since (about a month) remained quite free from the attacks and from the less acute gastric distress, which usually occupied the intervals. Irrigation of the colon was practiced in this case, by means of large cold-water enemata (two quarts), which the patient administered to herself on the days alternating with those of stomach washing. Not only was the constipation relieved by this, but the patient was emphatic in asserting the immediate sensations of *bien être* which followed their use.

The CHAIRMAN asked whether there was any microscopical evidence of sarcinæ in the vomited matter in the second case.

Dr. JACOBI said that the vomited matter had not been examined microscopically, but that there had been no hot vomiting characteristic of "water-brash," nor other symptoms to suggest this particular form of fermentation. Fermentation of some kind, however, unquestionably existed.

Dr. G. H. ELLIOTT said that in caries of the spine dyspeptic symptoms were not uncommon. Many children suffering from the disease had large, flabby abdomens, and their stomach and intestines were distended with gas. He considered the functional derangement of the gastro-intestinal tract due largely to the atonic condition of the muscular coat, the latter partaking of that lax condition which was present throughout the entire voluntary muscular system. The intestinal symptoms in caries of the spine often obscured an early diagnosis. He regarded functional disease of the gastro-intestinal tract as different from functional disease of other organs. In many organs functional maladies might exist a long time without producing a decided lesion, but functional disease of the alimentary tract could not long exist without producing a serious lesion—the great distensibility incident to the products of indigested food produced atrophy of the muscular coat and the gland structure. The speaker had met with an accident in washing out the stomach of a man who had the symptoms of ordinary chronic gastritis. There was no vomiting after taking food, no cachexia, no pain, and no tumor was detected by palpation, yet, on introducing the tube, the man suddenly died, and, at the autopsy, the tube was shown to have ruptured a vessel in a carcinomatous growth.

Dr. W. M. LESZNSKY considered strong tea, from its astringency, a frequent cause of dyspepsia in women.

Dr. W. O. MOORE related a case in which dyspepsia was always induced by overwork. In this case relief was afforded by galvanization of the pneumogastric nerves directly after a meal.

The CHAIRMAN said that the brain resembled a steam-engine of which the power was hired out to a number of individuals, one of whom might be deprived of his due share of the power from over-use by somebody else. The stomach, in Dr. Moore's case, had probably suffered in this way. There were some people who, no matter how little their brain-force might be, would try to use it to excess in their undertakings, and dyspepsia was one of the results. To cure this kind of dyspepsia, the most

essential condition was rest for the brain, or rather recreation. The theatre was a very good remedy, as it substituted for other brain-work the exercise of the perceptive faculties, which required less expenditure of nerve-force. The speaker gave in these cases as an anti-fermentative, glycerin, a half-ounce after each meal, with pepsin in large doses. Fairchild's pepsin was recommended, as it contained neither sugar nor starch. A few drops of the diluted hydrochloric acid might be added to this mixture. For the pain of dyspepsia, which might be so aggravating as to destroy all pleasure in life, the speaker had used the ice bladder to the stomach with immediate relief. It was supposed to act in a reflex manner, as sufficient time for cooling did not elapse. Dyspeptics should use principally animal food, which should not be overcooked. From eight to ten tumblersful of water might be beneficially taken with each meal. Iced water was objectionable, as was also the very hot water recently advocated, and for the same reason. Skimmed-milk diet was useful in cases of absolute absence of digestive power. A recent case of dyspepsia, in which the patient suffered from convulsive seizures, epileptic in character, was cured in this way. A board bill of fifteen dollars a day was reduced to a bill of thirty cents a day, and since commencing the treatment the patient has had no other attack.

Dr. A. H. SMITH closed the discussion. He considered that the Chairman had treated the stomach with disrespect. The engine would be of no use if there were not a coal-pit behind. The stomach was the coal-pit for the brain. Great thinkers had, as a rule, great digestive powers.

Acute Diffuse Nephritis following Intestinal Catarrh, in an Infant.—Clinical histories being in order, Dr. S. J. McNUTT related the history of a case of dyspepsia following intestinal catarrh, complicated with nephritis, in a child two months and a half old that had been brought to the Children's Clinic October 18th, with the history of having had diarrhoea for three weeks, and at one time from fifteen to twenty passages daily. It had never been fed on any other food than breast-milk. The evacuations were green and offensive, and contained pus. The child was irritable and started at a noise. The anterior fontanelle was slightly bulging, and the child cried when it was pressed upon. The temperature was 101° F., and the pulse rapid and compressible. Half a teaspoonful of castor-oil mixture was ordered to be given after each passage, and on the second day the temperature was 99° , and the pulse 120. The patient had slept, and the passages had been reduced to one a day, but they were full of fine flocculent curds. She was given half a teaspoonful of the syrup of the lactophosphates three times a day, before nursing, but the character of the stools did not improve, although the use of astringents, alkalies, and carminatives was kept up.

On the 26th she was reported as passing but little urine; there was restlessness, the pupils were contracted, and the eyes rolled up, the temperature and pulse were normal, and she was having four passages daily. About an ounce and a half of urine was withdrawn with a catheter, and it had the appearance of moistened corn-meal. Dr. Outerbridge found that its specific gravity was 1.016, that the sediment was about one fifth of the whole amount, and that albumin was plentiful, with a few lymphoid cells and small hyaline, epithelial, and granular casts. Two days later the child had convulsions, and, in spite of appropriate treatment, died in twelve hours. An autopsy could not be obtained, but, even without it, the evidence of acute diffuse nephritis was absolute.

Dr. McNUTT remarked that the association of intestinal catarrh with nephritis was recognized by Eustace Smith ("Disease in Children," 1884, p. 80) and by Hensch ("Vorlesungen über Kinderkrankheiten"), and that J. Lewis Smith ("Diseases of

Children," 1876, p. 619) said of the intestinal inflammation of infancy that uræmia might be the cause of death in certain cases. Hensch quoted Trietz as having observed intestinal troubles as an accompaniment of nephritis, and accounted for it by the irritation caused by urea in the blood. Eustace Smith, on the contrary, quoted Kjellberg as considering the nephritis as a complication of the catarrh. Kjellberg stated that in one hundred and forty-three cases of fatal intestinal catarrh he had found kidney disease in sixty-seven, and these figures were calculated to excite apprehension of kidney trouble in cases of intestinal catarrh, especially when cerebral symptoms appeared, the latter being commonly considered to be due to the reflected irritation from the canal, or to exhaustion from the diarrhoea, as in spurious hydrocephalus. According to Eustace Smith, Parrot had suggested that spurious hydrocephalus might even be caused by uræmic poisoning from deficient renal secretion. The symptoms of brain trouble in these cases were so similar to those of uræmia that the possibility of the latter should always be considered, and examinations of the urine should be a matter of routine in cases of intestinal catarrh. It was known that, normally, the proportion of solids in a child's urine was double that in an adult's, and in intestinal catarrh the urine was still more concentrated on account of the watery drain through the bowel. It was possible that this concentrated urine might in itself be sufficiently irritating to cause the nephritis. In the case that had been related, however, the great scantiness of the urine did not occur until the diarrhoea had been checked; it appeared as the result of the nephritis rather than as its cause. But there was almost complete indigestion at that time, and it was suggested that the circulation of the products of fermentation might have been the origin of the kidney complication. The syrup of the lactophosphates was given to combat this lack of digestive power, for it was known that pepsin was of little use in the dyspepsia of infants, from the fact that it did not aid the digestion of unaltered casein. According to the researches of Hammerston (Hermann's "Handbuch der Physiologie," vol. i, p. 49), the milk was first coagulated by a peculiar ferment, active only in the presence of the earthy phosphates, and was then attacked by the pepsin. The milk of anæmic women being deficient in phosphates, the syrup of the lactophosphates was given to supply the lack; although in this case it was given too late, in the majority of cases of simple functional dyspepsia great improvement followed its use.

Dermatitis following the Use of a Toilet Preparation of Heliotrope.—Dr. W. M. LESZINSKY related the history of the case of a man who bathed his lower lip, chin, and brows with Lubin's "triple extract of heliotrope," and immediately felt a slight stinging sensation, which gradually disappeared during the evening. The next morning the parts were red and slightly irritable, and toward evening so severe a dermatitis had developed that both eyes were closed, the face was swollen, and the features were distorted beyond recognition. These effects were confined strictly to the parts to which the perfume had been applied. The pain became so severe that the patient could not sleep, but the inflammation gradually subsided in the course of four days, passing through successive stages of eczema and furunculosis. The case was treated like one of dermatitis venenata, or rhus poisoning. Equal parts of liquor plumbi subacetatis dilutus and lime-water seemed to increase the discomfort and produced intolerable itching; the greatest relief was obtained by the almost continuous application of cloths wet with fluid extract of hamamelis. The patient had never before had dermatitis, although he was accustomed to the use of bay rum. An acid resinous principle had been found in the specimen of heliotrope extract that was used, but nothing else to account for the result.

Dr. A. H. SMITH had seen a similar dermatitis produced by the application of tincture of arnica, diluted with water, to the knee, the eruption resembling erysipelas, and extending as far as the arnica had been applied. It was also to be seen in spots on the face and breast, where the patient had applied his fingers wet with the fluid. The arnica flower was known to be infested sometimes by an insect that had the properties of the Spanish fly, and the irritant principle was soluble in alcohol, but not in water. Accordingly, the infusion of arnica had never been known to give rise to the symptoms. Possibly the heliotrope flower was at times infested in the same way.

The CHAIRMAN thought this supposition was unnecessary, and suggested that an idiosyncrasy was more probable. He alluded to a case in which like symptoms were always produced by turpentine.

A Pocket Armamentarium against Pain was shown by Dr. DANA. It was a small case containing four phials: one for a two-per-cent. solution of Duquesnel's aconitine in oleic acid, to be rubbed over neuralgic points; another for a fifty-per-cent. alcoholic solution of menthol, to be applied in like manner; a third for bisulphide of carbon, this phial having a wide mouth, so that it could be inverted over the seat of pain and the diffusion of the disagreeable odor of the drug prevented; and a fourth for chloroform, to be applied in the same way. A small spray-apparatus, with a phial of ether, might be added.

An Electric Light for Examinations was shown by Dr. W. O. MOORE. It was designed for use in examinations of the mouth and throat. The battery consisted of three cells in a portable box. The handle of the instrument, made of hard rubber, contained a resistance coil, and at the end there was an incandescent lamp, about half an inch in diameter, protected by hard rubber on one side, so that the mouth should not be burned. A laryngeal mirror could be arranged on the handle. The instrument was made by the Excelsior Manufacturing Company, of New York.

A Dynamometer, for testing the flexors of the hand, was shown by Dr. GRÈME M. HAMMOND. It consisted of an elliptical spring, to one end of which a dial-plate was attached. At the center of the dial two hands revolved on an axis, one superimposed upon the other in such a way that, when the sides of the spring were compressed, the upper hand made the circuit of the dial, carrying the lower hand with it, and the latter remained stationary at the farthest point reached, while the former returned to the starting-point when the spring was relaxed. The instrument was said to have two advantages: 1. The dial being outside the spring, the movements of the hands could be watched while the instrument remained within the patient's grasp, so that the observer could note the ability to sustain steady muscular contraction or a tremulous wave of contraction. 2. The dial being larger and the hands longer than in the old form of the instrument, very slight degrees of pressure were more readily indicated.

Miscellany.

THERAPEUTICAL NOTES.

Terpin.—The "Lyon médical" credits M. Fournie with the therapeutic application of this substance, the formula of which is given as $C_{10}H_{16}O_3$. According to the method suggested by Deville, it is prepared as follows:

Oil of turpentine.....	4 litres;
Nitric acid.....	1 litre;
Alcohol (80 per cent.).....	3 litres.

Mix thoroughly, and expose to the sun for six weeks. Transparent rhomboidal crystals are deposited, which are re-dissolved in alcohol. M. Fournie states that, if the mixture is distributed in several vessels, an exposure of only two or three days is required.

The alcoholic solution has been used, with good results, in bronchitis and chronic nephritis, in doses of from three to six grains. In bronchitis it acts as a stimulant expectorant, but, unlike turpentine, it increases instead of diminishing the bronchial secretion. In renal disease it shows decided diuretic powers from its direct action on the renal epithelium. It is to be used with caution in the latter cases, since large doses administered to animals have caused fatal hæmaturia.

The Effects of Anæsthetics on Drinkers.—M. Dubois, writing in the "Gazette des hôpitaux," says that, after observing the effects of chloroform upon alcoholic subjects, he was led to make a series of more exact experiments upon animals, as a result of which he draws the following practical deductions: Anæsthesia is induced more rapidly than usual when the patient is in a condition of acute alcoholism; a smaller quantity of chloroform is required; a larger proportion of fresh air is necessary in order to avoid a fatal result.

Ichthyol in the Treatment of Eczema.—Dr. Sinclair ("British Medical Journal") has used this remedy with success in several cases, but he thinks that its local application is not free from danger. In one instance an infant four months old sank into a state of stupor two hours after its head and limbs had been rubbed with an ointment of one part of ichthyol to five parts of vaseline.

Mullein in the Treatment of Phthisis.—In the same journal Dr. Quinlan says that he has made extensive experiments with this herb, and believes it to be superior to cod-liver oil as a curative and weight-increasing agent in the "pretubercular" stage of phthisis. It also possesses valuable expectorant powers in the later stages of the disease. He gives it in the form of a decoction prepared with milk. The leaves of the "great mullein" (*Verbascum thapsus*) are the only ones that possess the peculiar virtue.

Intra-venous Injections in Cholera.—M. Hayem has reported to the *Académie de médecine* ("Union médicale") a series of twenty-three cases of cholera, occurring at the Hôpital Saint-Antoine, which had been treated with intra-venous injections of salt water. Twenty of the patients were cured. The following solution was used:

Chloride of sodium.....	gr. lxxv;
Sulphate of sodium.....	3 iiss.;
Distilled water.....	5 iij.

Filter and warm to 38° C. The amount to be injected varies from six to eight ounces in the adult. Twelve to fifteen minutes should be taken for the operation. M. Hayem stated that he had himself employed this method of treatment in two hundred cases, with the result that twenty patients were cured and five improved. He had noticed the following phenomena after the injections: first, an intense rigor; then a gradual return of the surface heat, followed by a cessation of the cramps, repose, and often sleep. After this sudden reaction, the patient at once began to convalesce. In one instance the cure was perfect in two days. He thought that saline injections should not be regarded as a *dernier ressort*, but that they should be tried at the beginning of the algid stage.

Tartenson's Formula for Choleraic Diarrhœa is given as follows in the same journal:

Tincture of <i>Chelidonium majus</i>	℥ j;
Julep gommeux*.....	3 v.

Dose, a tablespoonful every two hours.

Gicquel's Anti-cholera Mixture, according to the same journal, is prepared as follows:

Extract of opium.....	2 grains;
Peppermint water,	
Distilled water,	
Syrup, each.....	10 fluidrachms;
Liquor ammonii acetatis.....	5 "

Dose, a tablespoonful every half-hour until two doses have been given, then a tablespoonful every hour or two, according to the nature

* An excipient consisting of gum arabic, syrup of marsh-mallow, and orange-flower water.

of the case. In the case of children the amounts of opium and acetate of ammonium are to be diminished.

Reuss's Tonic Pill, according to the same journal, is made as follows:

Arsenate of iron, gr. iijss.;
Extract of gentian,
Extract of calumba, each, gr. xxx.

Divide into forty-eight pills. In the case of persons of weak constitutions, where the development of tuberculosis is apprehended, one pill may be given at breakfast-time for eight successive days, after which an additional pill may be administered at dinner-time. Cod-liver oil and quinine, with counter-irritation by means of applications of tincture of iodine, should be resorted to in addition if there is any suspicion of dullness at the apices.

Tailed Men.—At a recent meeting of the Berlin Medical Society Professor Virchow read an interesting paper on this subject, in which he reviewed Redner's and Bartels's labors, and referred to some curious statistics by Dr. Umstein, the Surgeon-General of the Greek army. The latter had noticed so many cases of rudimentary caudal appendage among recruits presenting themselves for examination that he had drawn the inference that the Hellenic race was particularly prone to the deformity, and he had shown, by reference to the statues of satyrs, that the condition must have been noticed by the ancient Greeks. Virchow called attention to the fact that, although the natural tendency was to regard these sacral appendages as rudimentary tails, the argument was not sound unless it could be shown beyond doubt that the processes were really extensions of the vertebral column. Those cases, he said, in which the bony column was actually traced down into the tail had been reported by the older anatomists, and, therefore, were to be regarded with some distrust. Most of the caudal processes reported in recent times had been what he would characterize as "imperfect tails," consisting only of connective tissue, and perhaps they were simply of dermal origin. Redner, however, had not regarded this fact as militating against his theory. Virchow cited a case in which there was a peculiar growth of hair over a prominence in the sacral region, but, on close examination, it was found to be simply a spina bifida. "Consequently," he remarked, "we had here to do not with an atavistic, but with a pathological product."

Bartels said, at the same meeting, that we must distinguish carefully between tails which contained bones and those which did not. Among the former were to be classed what he called the atavistic tails, but he added that no undeniable example of the latter had yet been found. He thought that there were five varieties of the rudimentary caudal appendage in man: 1. The short stump, without bony contents, representing the remains of the foetal tail. 2. The "pig-tail," also boneless, arising from an actual increase in the size of the original foetal process. 3. The "swollen" tail, due to persistence of the prominence which remained after the disappearance of the embryonic tail (*Steisshöcker*). 4. The bony tail, which was due to hypertrophy of the sacral vertebrae rather than to an increase in their number. 5. "The still doubtful atavistic tail," in which there was an actual increase in the number of the vertebrae.

Cobra Venom.—Dr. Wolfenden, writing in the "Indian Medical Gazette," gives the result of some interesting experiments upon this subject. After reviewing those of other investigators, especially Wall and Weir Mitchell, he describes his own, which were undertaken with the object of throwing light upon the chemistry and the physiological action of cobra poison. The dried poison was used, which is soluble in water, but forms a cloudy solution on account of partial precipitation of the globulin. By boiling the fluid the proteids are coagulated, and, as the filtrate is found not to be poisonous, the venom must be incorporated with the proteids. The latter bodies may be separated into a globulin venom and a serum-albumin venom, and according as the one or the other of these is present in excess will the symptoms be chiefly of the paralytic or of the asphyxiating character. "Morphologically," he observes, "the glands secreting the poison resemble parotids, and the resemblance is still more striking from the occurrence of a diastatic ferment in the secretion, which was long ago spoken of as analogous to

pytalin. The venom is generally thought, physiologically, to be modified salivary secretion, consequently we should scarcely expect to find peptone present." Solutions containing each of these albumins were injected beneath the skin of rats, with varying results. The following general deductions are made: 1. In cobra poison there are two different venoms, cobra globulin venom, and cobra albumin venom. 2. The former is destroyed by a high temperature, but the latter is not affected. 3. The globulin venom poisons the respiratory center, producing no paralysis of muscles; the albumin venom does not affect the respiratory center, but produces marked and progressive motor paralysis. The statement is added that the bacteria, which are found in large numbers in cobra venom, have nothing to do with its activity.

Disinfecting the Sputa of Phthisis.—Dr. J. Sormani, Professor of Hygiene at the University of Pavia, gave some interesting details at the Hygienic Congress of the Hague concerning experiments made this year on one hundred and fifty Guinea-pigs with the sputa from phthisis. The object in each case was to ascertain what chemical or other methods would neutralize the bacillus, which it was previously ascertained existed in large numbers in the sputa. The results of these experiments were summarized in the following manner: 1. The bacilli of tuberculosis were generally very difficult to destroy; dryness, exposure to oxygen, putrefaction, and most disinfectants failed to produce any effect. 2. A temperature of 100° C. only killed the bacilli after at least five minutes of ebullition. 3. The artificial digestion of bacilli showed that they were the last of all living organisms to be destroyed by the gastric juices or chloridic acid. A very active digestion is necessary to kill this microbe. A healthy man may destroy the bacilli in his stomach, but an infant or an adult with his digestive faculties impaired would easily allow the germ to pass the stomach intact, and retain its virulence in the intestinal tube. This determined enteric ulcerations, etc. 4. The bacillus of tuberculosis can be preserved intact for a whole year when mixed with water. It is probable, though not proved, that it has retained its virulence during that time. Thus drinking water may become the means of propagating tuberculosis. It is probable that contaminated linen retains its virulence for five or six months. 5. Alcohol does not destroy the germ, and hard drinkers often suffer from tuberculosis. 6. Cod-liver oil, ozone, oxygenated preparations, and other similar remedies, have no effect in killing the bacillus, nor are benzoate of sodium, salicylate of sodium, sulphate of zinc and carbolic acid, iodide of silver, bromide of camphor, etc., of much greater use. They injure, perhaps, but do not absolutely destroy the bacillus—at least not in the doses that can be taken without danger. 7. A more decisive action may be attributed to creosote, eucalyptol, pure carbolic acid, the naphthols, and bichloride of mercury. 8. For disinfecting spittoons, carbolic acid solution at 5 per cent. is thought sufficient, and Dr. Sormani asserts that the breath never contains any bacillus. He also suggested that essences of turpentine or eucalyptol should be diffused in the houses as an agent for the destruction of this special germ.—*Lancet*.

An Appointment under the New State Civil-Service Rules has lately been made, the position being that of First Assistant Physician to the Hudson River State Hospital for the Insane, at Poughkeepsie. Thirteen candidates were examined by a very competent board, sitting in New York, and the successful candidate was Dr. Frederick Peterson, of Buffalo.

Bartholow's "Materia Medica and Therapeutics."—We understand that this standard work is to be translated into French.

Progress in Antiseptics.—It is reported that Esmarch now uses metal operating-tables at his clinic. All the instruments are said to be nickel-plated and to have metallic handles. By discarding wooden articles, the great surgeon hopes to diminish the risks of septic infection, says the "St. Petersburger med. Wochenschrift," from which the foregoing is taken.

Deaths from Anæsthesia.—In the "British Medical Journal" Jacob reports thirteen cases of death from anæsthetics in England during the year 1883, eleven of which were due to chloroform, one to a mixture of chloroform and ether, and one to nitrous oxide. The fact that the total is smaller than in previous years is ascribed to the general use of ether.

Original Communications.

LARYNGEAL SPASM.*

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MR. PRESIDENT AND FELLOW-MEMBERS: At our meeting in Boston, in a paper on the "Muscles of the Larynx and their Paralysis," and again, last year, in discussing Dr. Lefferts's description—under the very startling caption, "*New Facts in Laryngology*"—of two cases of so-called laryngeal vertigo or laryngeal epilepsy, I made a few remarks on spasm of the larynx. Now I call your attention to the same subject at the special request of our President. I desire, however, to apologize to you for my very imperfect manner of presenting it. I have had no opportunity of writing down what I am about to read until this very morning. If I can do no more, however, I may at least lead you to study, under one systematic head, some very interesting conditions which have been hitherto considered as anomalous and as more or less unrelated; and I promise you that, if I live, I will prepare a more elaborate essay on the subject before our next annual meeting.

Although laryngeal spasm has doubtless occurred in all times of history, our knowledge of it is comparatively recent. As to children, who are affected by it more frequently than adults, the first description seems to be only about two hundred years old; and, as to adults, there reigns much confusion concerning it at the present day. The affection is not properly appreciated even by throat specialists, and particular cases of it have been heretofore diagnosed as cases of paralysis of antagonistic muscles, or recorded, as even members of our own association have done, by such objectionable names as laryngeal chorea, laryngeal epilepsy, nervous cough, choked voice, aphonia spastica, etc.

DEFINITION AND CLASSIFICATION.—Laryngeal spasm is the spasmodic contraction of one or more of the laryngeal muscles. It may be unilateral (although I personally am not sure, at this moment, that I have ever observed it confined to one side) or bilateral. It may be simple and affect only one muscle or one group of muscles of the larynx, incompletely or totally; or it may be complicated, and in the latter case involve not only laryngeal muscles, but also the diaphragm, other respiratory muscles, and even other muscles of the body. It may occur either in the domain of the superior laryngeal nerve or in that of the inferior laryngeal nerve, or in both; and it may affect either the adductor or the abductor muscles. Its individual paroxysms may be induced by exercising a particular function of the larynx, or they may come on spontaneously while the patient is only quietly breathing. The special classification that I make is: I. Abductor Spasm; II. Adductor Spasm; and, 1. Deglutitory, 2. Inspiratory, 3. Expiratory (including 4. Phonatory) forms, these being (a) simple, or (b) complicated.

SYNONYMS.—So far as I remember at this moment, with the exception of Fraentzel and Cohen (and perhaps Hack), no author has hitherto described laryngeal *abductor* spasm, and all the synonyms that have been used for laryngeal spasm, or laryngospasmus, or laryngismus, or spasmus glottidis—and, indeed, these designations themselves—have been applied to *adductor* spasm only. These synonyms are laryngismus stridulus, laryngeal asthma, stridulous laryngitis, spasmodic laryngitis, pseudo-croup, spasmodic croup, nervous croup, cerebral croup, suffocative convulsion, internal convulsions, angina spastica, and angina stridulosa. As observed mainly in children, and for the same in either children or adults, and for various forms of the same: tetanus apnoicus infantum, intermittent asthma of children, clangor infantum, child-crowing, crowing inspiration, vocal asynergy, disordered co-ordination or perverse action of the laryngeal muscles, aphonia spastica, dysphonia spastica, spasmodic cough, nervous cough, hysterical cough, laryngeal chorea, laryngeal vertigo, etc.

ÆTIOLOGY.—It is well to distinguish between predisposing and exciting causes in the production of laryngeal spasm, and among predisposing causes morbidly increased irritability and reflex activity of the nervous system occupy the first place. It is mainly on this account that age exercises a very great influence upon the occurrence of the affection. Although I have seen several cases in infants a few days or weeks old, and from that age up to seventy years, it occurs most frequently after the fourth and before the twenty-fourth month of life. To regard it as exclusively a disease of childhood is erroneous; some forms of it, indeed, have been observed in adult age only, and the excitable condition of the nervous system, predisposing to convulsive muscular action on the one hand, and the small size of the rima glottidis and flexibility of the cartilaginous frame-work of the larynx on the other, sufficiently explain the frequency and gravity of laryngeal spasm in children. As to sex, boys are more frequently affected than girls, but adult women more frequently than men.

Hereditary influence has been looked upon as an efficient factor, but this acts probably only very indirectly. The physical organization of a child is very influential in the production of the disease. Children who are ill nourished and live in badly ventilated rooms are, above all others, subject to the disease. Among the upper classes, hand-fed children are most frequently attacked, while among the poor the affection is most common where the mother is in bad health, or continues to suckle for too long a time. Often the disease comes on at the time of weaning, by the use of farinaceous food which the child is unable to digest. Rhabditic conditions frequently accompany or cause a predisposition to spasm; indeed, according to some statistics, three fourths of the whole number of children affected are rickety. Various cerebral affections, especially hydrocephalus and microcephalus, predispose to the spasm. Enlargement of the thymus body, which at one time was supposed to be the only cause of infantile laryngismus, is occasionally present, but is probably never really causative; but pressure upon the laryngeal nerves in children or adults, whether proceeding from en-

* Read before the American Laryngological Association, May 14, 1884.

largement of the thyroid body, lymphatic glands, aneurysmal or other tumor in the neck or within the thorax, when not sufficient to cause paralysis, may produce spasm. In locomotor ataxia, hydrophobia, tetanus, epilepsy, and chorea, laryngeal spasm is apt to occur; and the hydra-headed neurosis, hysteria, must never be left out of sight as a very influential, predisposing, and occasionally even as an exciting, cause of laryngeal spasm. Injuries, foreign bodies (as a little milk during sucking of infants, or a little saliva, or in adults a drop or a crumb of some kind, getting into the larynx), or direct or reflex nervous irritation, may bring on laryngeal spasm. Spasms, more or less severe, are not uncommon in hyperæsthesia of the larynx, and especially in the over-sensitiveness of the mucous membrane sometimes persisting after the removal of inflammation or irritating conditions of the larynx, of tumors, etc. Paralytic conditions of one muscle or set of muscles sometimes excite spasm of associated or antagonistic muscles.

Among the exciting causes in children, catarrhal irritation of the respiratory mucous membrane is an important one, and it is on this account that infantile laryngismus is more frequent in the winter months, especially in March; gastric disturbances constitute another: indeed, one author (Flesch) seems to regard improper (and especially over-) feeding in infants as the only efficient cause; emotional excitements, such as fright, anger, or a crying spell, are sufficient to produce a paroxysm in a child subject or predisposed to laryngeal spasm. In adults, also, emotional causes and shocks of various kinds may act as exciting causes, aside from the exercise of a particular laryngeal function, which is a usual exciting circumstance. In one of my adult patients one of the worst attacks was brought on by being in a high swing; in another by being shampooed and having too much water poured on the head. I remember a young girl, from the northern part of this State, who was sent to me by Dr. Faneuil D. Weisse for treatment, about ten years ago, suffering from complicated expiratory adductor spasm, in whom a very severe paroxysm could be produced on touching with a probe her greatly enlarged and degenerated tonsils. Removing these and a catarrhal condition (which existed especially at the upper aperture of the larynx) completely cured the patient, in whom, however, some months later, chorea appeared, from which, as I afterward understood, she only very gradually recovered.

SYMPTOMS AND DIAGNOSIS.—The symptoms of laryngeal spasm differ entirely according to the set of muscles affected. In adductor spasm there is excessive approximation of the vocal bands, or in some other way closure of the laryngeal aperture; in abductor spasm there is insufficient closure of the rima glottidis.

I. Adductor Spasm.—Dr. Fraentzel has described a case of spasm of the abductors co-existing with paralysis of the adductors. The symptoms were absolute aphonia and absence of the slightest indication of laryngeal sound; even cough was entirely inaudible. The laryngoscope showed the vocal bands, during attempts to phonate and during forced expiration, in the completest inspiratory position. If I remember correctly, Dr. Cohen has exhibited before this association, at its first or second meeting, a similar case;

he has recorded four additional cases of apsithuria; but whether or not there existed abductor spasm in these I can not at this moment say. I have had under my care at least five (and it may be more) patients in whom I positively diagnosed spasm of the posterior crico-arytenoid muscle. In most of them—perhaps in all but one—there was also more or less adductor paralysis; but in one case, in which there was recurrent complete apsithuria (i. e., inability to whisper) and inability to make voluntarily any laryngeal sound whatever, and in which the laryngoscope showed the vocal bands in extreme inspiratory position, etherization, performed for diagnostic purposes, proved the integrity of the adductor laryngeal muscles. This patient could also at other times involuntarily make audible sounds; sometimes he could laugh and cough aloud, etc. The spasm relaxed at irregular intervals, and occasionally came on for a few minutes only, just when the patient desired most to talk.

II. Adductor Spasm.—The symptoms of adductor laryngeal spasm vary according to the number of affected muscles, the degree and the form. A laryngoscopic examination is not always possible; when successful, it reveals in some cases nothing abnormal or nothing characteristic; in other cases the image varies according to what particular muscle or muscles may be affected; thus isolated spasm of the lateral crico-arytenoid gives the same image as combined paralysis of the thyro-arytenoid and arytenoid muscles, spasm of all the adductors—gives an image somewhat similar to, but more varying than, that of paralysis of the abductors, etc. Diagnosis is sometimes rendered more difficult on account of the co-existence of spasm of one muscle with paralysis of another; but a correct conclusion can be arrived at by the careful consideration of the symptoms and the mirror-observation under varying circumstances.

1. In the simple deglutitory form of adductor laryngeal spasm, the act of swallowing itself may show nothing abnormal, but immediately after it is finished, with or without a little spasmodic cough, more or less suffocation supervenes. There may be so much narrowing of the rima glottidis that the patient may suddenly frantically grasp his throat, struggle for breath, become cyanotic in the face, and lose consciousness. All this lasts less than a minute, the patient regains consciousness, can breathe perfectly well, and, until the next attack, can swallow both solids and liquids freely, while after an irregular interval—sometimes an interval of days or weeks, and even months—the mere performance of the act of swallowing may bring on another paroxysm; but I have seen one very marked and unquestionable case of this kind, in which for nearly a week there was complete or total spasm of all the laryngeal adductor muscles *whenever* the patient swallowed, so that starvation stared her in the face. In other cases only the swallowing of solid, and in some the swallowing of a particular article or particular articles of food, brings on an attack. The dreaded infantile adductor spasm (usually complicated inspiratory spasm) occurs in some children, who are subject to it, on swallowing, during sucking, especially from a bottle. Cases are reported by Flesch in which the use of a nursing-bottle, and even a tablespoon, had to be given up

on this account, and food had to be administered with the smallest teaspoon to avoid the spasm.

2. In the simple inspiratory form there are more or less dyspnoea and strident noises with every inspiration, while expiration is normal, deglutition free, there is little or no cough, and the voice is unaffected. On etherizing or chloroforming the patient, and during natural sleep, the dyspnoea and stridor disappear, and the attacks often intermit for hours. The laryngoscope shows normal movements of the vocal bands during phonation and expiration, but, on attempted inspiration, the bands, instead of separating more widely when they are in the cadaveric position, approach each other with abrupt and oscillating jerks, sometimes being forcibly pushed against each other and held a moment together. In severe cases the violent and complete closure of the rima glottidis may last long enough to cause unconsciousness before the spasm relaxes. This is a condition which sometimes may be mistaken for paralysis of the posterior crico-arytenoid muscles, especially as it is occasionally combined with that affection; but it may exist without it, and then the abductor muscles may at times be seen to act perfectly. The differential diagnosis can readily be made unless there is such a thing as transitory paralysis as well as permanent spasm. Most of the cases of the heretofore so-called laryngeal vertigo are cases of inspiratory, some of them of deglutitory, adductor spasm.

3. In the simple phonatory form there are no symptoms unless the patient attempts to sound his voice. When he does so, the vocal bands quickly and forcibly approach each other and close the rima so completely that the voice is, as Dr. French, though not recognizing the precise condition, has well expressed it, "*choked.*" If the patient persists in the phonatory effort, severe dyspnoea, pain, and other cramps may ensue, and the ventricles of Morgagni may be so forcibly inflated that the ventricular folds appear swollen, *i. e.*, the two folds may be in contact with each other; but, if the patient ceases to try to phonate, all symptoms pass away almost immediately, and respiration becomes free. Sometimes the patient can stutter out a few words or sentences, sometimes he can not make a single sound. Sometimes the words that are pressed out are high and squeaky, sometimes they are husky and low and labored.

4. In the simple expiratory form the attack comes on if the patient attempts to whisper, as well as if he tries to talk or sing; or it may be that the attack comes on, as in a case of Nothnagel's, if the patient attempts to blow out a burning candle; as in a case of Voltolini's, if he coughs forcibly; or as in a case of Jouquièr's, if he laughs.

In cases of simple expiratory, including phonatory, spasm, one important point to be noticed is that the patient generally finds it easier to make vocal sounds on inspiration than on expiration, and may gradually fall into the habit of inspiratory phonation. This necessitates a puffing out of inspired air from time to time, which, together with the acoustic character and laboriousness of the patient's voice, are quite characteristic. As the laryngeal muscles under these circumstances are overworked, they become fatigued, and paresis, or even paralysis, of one or more of them ensues. Sometimes the order of occurrences is the reverse, *i. e.*,

sometimes paralysis and inspiratory phonation precede and cause the spasm.

In simple expiratory and phonatory spasm the laryngoscope reveals the spasmodic contraction of the adductor muscles, and the image seen varies with the muscle or muscles affected. The lateralis (lateral crico-arytenoid) is generally involved, also the inferior (thyro-arytenoid), with or without the transversus (arytenoid). In a case reported by Hack, the latter muscle was paralyzed, hence the otherwise forcibly closed rima showed a triangular opening posteriorly. Spasm of the anticus (thyro-cricoid) muscle is sometimes found combined with depression of the epiglottis, which depression persisting, even after the spasm may have yielded, leads, especially in children, to apnoea and death.

5. In the complicated expiratory form, the main symptom is a curious cough. Some authors have attempted to characterize this cough by its mode, others by its acoustic properties or by both.

a. As to its mode, it is of two kinds, being either (1) a paroxysmal cough, in which, as long as it lasts, hack follows hack in rather quick succession; or (2) a continuing cough, in which the hacks follow each other incessantly at regular intervals. In the first the hacks are sometimes exceedingly violent—from thirty to one hundred and more a minute—and during the paroxysm, which may last for a minute to a quarter of an hour, and even longer, the patient can not stop them. As a rule, the cough is dry, though frequently at the end of a paroxysm there is a little sputum expectorated. The paroxysms occur once or several times a day, usually at irregular, but sometimes at regular intervals; usually spontaneously, but sometimes induced by an external cause, especially emotional or physical excitement or exertion. They do not occur during sleep. In the second kind, the continuing cough, the hacks, not so severe as in the paroxysmal kind, observe a regular and sometimes a very complicated rhythm. The intervals vary from a number of seconds to several minutes, very seldom, however, being as much as half an hour. Like the paroxysmal, the continuing cough usually stops during sleep, though this is not so invariably the case with the latter; but, unlike the former, it can be controlled by the patient while talking, singing, yawning, or swallowing, or during a laryngoscopic examination. Except by such or similar functional exercise, the patient's will has little or no restraining influence; on the contrary, sometimes the hacks are aggravated when the patient tries to suppress them or pays special attention to them, the same effect being sometimes produced when the patient is conscious of being observed by others. Preceding, accompanying, alternating with, or following this kind of spasm, other spasmodic movements, especially of the facial muscles, and also other involuntary and incoordinate twitchings constituting chorea, are sometimes observed. It is this spasm or cough which has given rise to the diagnosis of "laryngeal chorea," a designation which I decidedly advise you never to use.

b. As to the acoustic properties of the cough of the complicated expiratory form of laryngeal adductor spasm, it must be stated that these often are peculiar. They resemble occasionally the barking or yelping of a dog, the quacking

of a duck, the lowing of cattle, or crowing, or are shrill, metallic, or croup-like. Usually the noise is quite loud, sometimes so extraordinarily loud that it can be heard at great distances, exceptionally so little loud that it can hardly be called cough at all, but is rather a clicking or blowing sound.

On mirror examination, the interior of the larynx shows sometimes a catarrhal condition, sometimes anæmia, but more often no abnormality. The quickly repeated closure and opening of the rima can sometimes be observed with the laryngoscope, but more often it can not.

The diagnosis of the curious cough is not usually difficult if the examiner has assured himself that no organic lesion that might cause it has been overlooked. In addition, it must be remembered that a so-called "nervous" cough, very similar to the one under consideration, is sometimes present in the very incipient stage of phthisis.

6. The complicated inspiratory form is the severest and most dangerous. Its characteristic group of symptoms in children properly constitutes the picture which the designation "spasm of the glottis," or "laryngismus," calls up in the medical mind. This is well enough known; it is described as follows by Mackenzie (English edition, p. 483): "The first attack of laryngismus often comes on at night—frequently toward eleven or twelve o'clock, when the first sleep is passing off. It may occur to a child who up to that moment had seemed perfectly well, but more often the subject of the attack has been peevish and fretful for a few days before, has suffered from loss of appetite, and been restless at night, or a slight 'catch' has been noticed in its breathing. A severe fit of laryngismus may be thus described. A number of short, stridulous inspirations take place, each inspiration being a little longer than the preceding one, and the last being often very prolonged. Suddenly the sound ceases, the glottis is completely closed, and the respiratory movements of the chest are suspended. The flush which first suffused the countenance gives way to pallor and afterward to lividity. The eyes stare or the eyeballs roll, the head is thrown back, and the spine is often bent as in opisthotonus; the veins of the neck are turgid, the fingers close on the thumb, which is bent in the palm, and the hands are flexed on the wrist. Spasm likewise affects the feet; the great toe is drawn away from its fellows, the foot is flexed and rotated slightly outward. In some cases these so-called 'carpo-pedal' contractions are probably accompanied with great pain, and occasionally they are followed by general convulsions. Notwithstanding the severity of the paroxysm just described, it is not necessarily fatal; the patient may survive it, in which case the diaphragm soon relaxes, a stridulous inspiration is heard, air enters the lungs, and the spasmodic contraction of the feet and hands gradually yields. But, when the symptoms are of the dangerous character just described, the paroxysm is probably destined to be quickly followed by others, in one of which the child may die. In less severe cases all the symptoms are less marked, and the carpo-pedal contractions are often altogether absent. The attack frequently comes on while the child is at the breast. The infant suddenly stops sucking and looks round, its eyeballs are turned up, and after a second or two a loud crow is heard; the infant

then returns to the breast or the bottle, but only to be seized immediately afterward with a similar paroxysm. Sometimes each attempt to suck brings on such an alarming attack of spasm that the unhappy mother hesitates between the alternatives of starvation and suffocation. Again, in other cases, the attack assumes the form of a sudden, almost soundless, spasm, which does not relax till life is extinct. In very rare cases a slight but constant spasm is shown by stridulous breathing. In the common type of cases, when the attack has occurred for the first time at night, the child may appear to be quite well on the following day, and there may be no further return of the symptoms; but it more often happens that another attack comes on a few hours afterward, or at the same time on the following night. Sometimes the second attack supervenes almost as soon as the child has recovered from the first, in which event it is generally more serious, both in its character and duration, than the first. In severe cases, indeed, the paroxysms are so frequent that the child is scarcely out of one fit before it is again attacked. As a rule, there is an entire absence of pyrexia in these cases, though sweating of the head, so characteristic of the rachitic constitution, is almost always present. Now and then the patient may look healthy, and may even be plump, but, on closer examination, it will be found that the muscular system is weak, that the child is easily fatigued, and that it shows other signs of feeble organization."

PROGNOSIS.—The bases for prognosis are not generally understood. What Flesch says of infantile laryngismus is true of all cases of laryngeal spasm, viz.: "The progress is always doubtful, even in the simplest not complicated cases." I do not mean as to life, but as to recovery, for some spasms do not threaten life at all. The incarceration of the epiglottis between the larynx and pharynx, to which Cohen has first called prominent attention, is, of course, exceedingly dangerous. Last year, in speaking of Dr. Lefferts's two cases, in which there was complete or total spasm of the laryngeal adductor muscles, I used these words before you: "To this completeness is due the brief duration of each attack and thereby the safety of the patient. In incomplete spasm—that is, when not all the adductor muscles are affected—partial respiration but incomplete aëration of the blood may go on and lead to a fatal issue unless tracheotomy is performed; but the total spasm produces unconsciousness, whereupon the spasm relaxes and the attack is over." Prognosis as to life is largely influenced by this difference, but (and this is especially true of children) the unconsciousness of total spasm may pass into death. Mackenzie says: "The length of the intervals between the paroxysms is a good prognostic guide; the longer the interval the greater is the chance of recovery." And what Flesch says, in his article in Gerhard's "Hand-book of Children's Diseases," on infantile laryngismus, amounts to this, that he takes no responsibility for the first forty-eight hours, but then, with strictest following out of his orders, prognosticates certain recovery.

TREATMENT.—The treatment of laryngeal spasm requires often great promptitude, sometimes operative skill, and always good judgment.

Abductor spasm is so often found to be accompanied by (perhaps in some way dependent upon) paralysis of the adductor muscles that stimulation of these is an integral part of its therapeutics. Indeed, even in the case in which the adductors were proved to be intact, their stimulation by strychnine and galvanism was the only treatment resorted to, and was successful in curing the patient.

In adductor spasm attention must be paid to the paroxysm, to the intervals between the attacks, and to prophylaxis. In infantile laryngismus, regulation of the child's diet is of the utmost importance. Fleisch, who has had great success in treating this disease, relies mainly upon it. He commences the treatment with an enema, which, if not effectual, is repeated after some hours. If the child suckles, he prohibits every other food, allows nursing every three hours only, and orders rest, fresh air, and other hygienic care; if the child is hand-fed, milk, at first diluted with an equal quantity of water (and gradually less diluted), is given at intervals of three hours, and only once a day meat-broth, the fæces being examined daily. Cod-liver oil and iron are given to rachitic children, and farinaceous food is absolutely forbidden.

When, as is usually the case, especially in children, the paroxysm lasts but a very short time, it is best to do nothing but keep the patient from harm. Altogether, the various antispasmodic measures and remedies that can be tried are too well known to necessitate my recounting them on this occasion.

There is only this that I want to say to you in conclusion, and I want to say it with great emphasis, viz.: *Ward off asphyxia in all prolonged and life-endangering adductor spasms; thrust the forefinger deep into the throat to discover whether the epiglottis is impacted, and, if so, release it, draw the tongue forward, etc.; if necessary, catheterize the trachea, particularly by means of Schrötter's three-cornered hard-rubber tubes, and add to this artificial respiration until spontaneous breathing is again carried on; and perform tracheotomy in all appropriate cases without hesitation.*

DISCUSSION.

Dr. INGALS inquired what sized catheters the author would consider necessary for children of various ages.

Dr. JARVIS asked Dr. Elsborg if he did not consider laryngeal growths one of the causes of spasm of the glottis. By that, said he, I mean to say that previous to the appearance of the growth no such condition may exist, but after removal of the growth spasm of the larynx continues, although no vestige of the tumor remains. In the case narrated by me yesterday no trace of the tumor remained after the operation, yet tickling of the larynx with the point of the probe caused very marked spasm. Under ordinary circumstances such spasm did not occur.

Dr. ROE said: I have seen a number of cases of spasm, and have never failed to relieve them by the use of chloroform. Last year I saw a case of spasm of the larynx due to irritation of the arytenoids. The patient was reduced almost to a state of starvation. By removal of the irritable condition, she gradually acquired courage to swallow, but it was only by the moral support of my presence, as I assured her that the means were at hand for her ready relief in case the spasm should again occur.

Dr. ELSBORG, in closing, said: I alluded in my paper to hyperæsthesia, such as Dr. Jarvis spoke of, as one of the causes of

spasmodic contraction of the muscles of the larynx. The case of Dr. Roe's is typical of one which I have in mind of deglutitory adductor spasm. I also regard chloroform as one of the best means for relieving the spasm, although it really, and especially in children, is a very dangerous remedy, and should be used in adductor spasm with very great circumspection. As to the point raised by Dr. Ingals, with regard to the size of the catheters to be used in children of different ages, I preferably use hard rubber catheters, especially those of Schrötter, but, of course, in a hurry any catheter may be employed which can be got through the rima glottidis. I employ tracheotomy-tubes of six different sizes. They are marked by the instrument-makers in the metric system, but, for convenience of memorizing, they are also marked in inches, as follows: One sixth, one fifth, one fourth, one third, five twelfths, and one half of an inch. My rule as to the age for which these sizes should be used is that during the first year I advise one sixth; from one year to three, *i. e.*, one multiplied by two, plus one, the next size; for from three years to twice three, plus one, *i. e.*, seven years, the third size; for patients from seven to fifteen (*i. e.*, twice seven, plus one) years old the fourth size; for boys over fifteen, and women, the fifth size; and so on, the largest size being employed in men or with specially large throats only. The appropriate catheter corresponds to these sizes and ages, only I select them, if possible, a trifle smaller.

EXTRA-UTERINE PREGNANCY,

WITH AN ACCOUNT OF TWO CASES AND THEIR TREATMENT.*

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I THINK I am safe in saying that it has only been by the closest and most careful study of the diagnosis of some of the graver diseases of women that surgeons have been enabled to surmount the difficulties of treatment, and to give to the department of gynecology those brilliant practical results in which our own country claims so large a share. This fact finds illustration in the advances made in the study of uterine and ovarian tumors, of the various injuries incident to parturition and their complications, and, more recently, of the necessities of prompt laparotomy in connection with tubal pregnancy. The manner in which this high aim of scientific thought has been carried out, and the results thereof utilized in the several lines of investigation indicated, it is not my purpose on the present occasion to discuss.

I propose simply to speak of the dangers of extra-uterine pregnancy, its treatment, and the importance of early and accurate diagnosis in this condition, as illustrated by two interesting cases of this abnormality which have recently come under my observation.

The dangers of extra-uterine pregnancy as dependent on anatomical conditions resolve themselves, practically, into, *first*, the immediate, and, *second*, the remote. The immediate dangers are those arising, within the earlier months of pregnancy, from the lodgment and growth of the impregnated ovum in some portion of one or other of the Fallopian tubes, the dangers of the lodgment always decreasing in the ratio of its approximation to the abdominal extremity. The remote dangers are those pertaining to the impregnated

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ovum as regards its growth and development, possibly to full term, in its relationship with the ovary alone, with the ovary and fimbriated extremity of the Fallopian tube jointly, or with some point in the peritoneal cavity, whether before or after the death of the fetus, or whether in connection with normal pregnancy as a complication.

With regard to the study of the diagnosis of tubal pregnancy, and the immediate dangers arising from rupture of the cyst and the resulting hæmorrhage, I feel warranted in stating that a more important and practical impulse was given the subject in 1867 than at any time previous by the late Dr. Stephen Rogers, of this city ("Transactions of the American Medical Association"); and, for the deductions then made as to the proper kind of treatment, science is certainly under lasting obligations to him.

It is true that Dr. Rogers contributed no astounding record of successful clinical results from his careful study and observations in connection with the subject, but what he did leave as a precious heritage to us was his earnest conviction that the immediate dangers above indicated should always be met and combated by a prompt resort to the operation of laparotomy and the controlling of hæmorrhage wherever found in the abdominal cavity—a principle of practice which has only been fully recognized and appreciated within the last year or two.

I confess it was the close study of the diagnosis as found embodied in his able memoir that first imbued my mind with the importance of the subject, and determined me to make an application of the teachings therein inculcated whenever an occasion offered.

Notwithstanding the great strides that have been made in gynæcology since the date of Dr. Rogers's publication, comparatively little has as yet been accomplished toward placing the important principle of practice enunciated by him upon a sound basis, and disarming tubal pregnancy of the terrors that have so long surrounded it.

To Mr. Lawson Tait, of England, more than any surgeon in any country, we are indebted for successful clinical results which not only stamp the procedure with a value never dreamed of by Dr. Rogers, but at once place it in the foremost rank as regards practical availability and usefulness. In an article entitled "Five Cases of Extra-uterine Pregnancy operated upon at the Time of Rupture" (*"British Medical Journal,"* June 28, 1884) he says: "I desire to place on record this, the first series, as I believe, of cases of extra-uterine pregnancy operated upon at the time of rupture—that is, from the tenth to the thirteenth week." After speaking of the difficulty of diagnosis, and the doubts arising therefrom as to the propriety of operative interference in this class of cases, he further says: "If, however, it be found that the patient has been eight weeks or more without a period, that there is a pelvic mass fixing the uterus and on one side of it, and that sudden and severe symptoms of pelvic trouble come on, the rupture of a tubal pregnancy may be at once suspected, and if an operation is to be done, and it clearly ought to be done, it must be done without delay."

In conclusion, in speaking of the pathology, and of the results obtained by him, he says: "These cases all confirm

the view of the pathology of extra-uterine pregnancy which I advanced many years ago, that in origin it is always tubal, and that its varieties depend merely on the direction in which rupture occurs. These results also confirm the soundness of the policy of interfering early in such cases, for four cases out of the five have been easily and completely cured of one of the most formidable conditions of pregnancy."

Nearly a year ago Dr. Charles K. Briddon, of this city, recorded (*"Annals of Anatomy and Surgery"* for Dec., 1883) a most interesting case of tubal pregnancy in which rupture of the cyst occurred in the eighth week, and he was called upon to operate (Oct. 29, 1883), under circumstances truly appalling, on account of the suddenness and profuseness of the hæmorrhage. He says: "Part of the ovum, one inch and a quarter in diameter, was found protruding from a rent in the left Fallopian tube close to its uterine extremity." The patient, a young and healthy woman, perished at the end of forty-seven hours. So far as I know, this was the first operation of the kind performed in this country.

Strange to say, it was only two or three weeks after reading Mr. Tait's article that I was called upon (August 21, 1884) to operate in my first case of tubal pregnancy, after an experience in the profession of over a third of a century. This case and another one of abdominal pregnancy, to which I was called in consultation only a month later, form the basis of this communication.

I will not here point out particularly the line of practice by which the remote dangers of abdominal pregnancy are to be met. Dr. T. G. Thomas and other writers have already brought this part of the subject prominently before the profession, and have shown excellent clinical results.

Next as to the prevention of the immediate dangers of extra-uterine pregnancy by the employment of electricity. This principle was first applied by Bachetti, of Italy, 1852, Braxton Hicks, of England, 1866, and in our own country by Joshua B. Allen, of Philadelphia, 1869. See article entitled "Electricity in Extra-uterine Pregnancy," by Henry J. Garrigues, A. M., M. D. (*"Trans. of the Am. Gynæcolog. Society,"* 1882, p. 184). The practice has for its object the early destruction of the life of the growing fetus, and, consequently, the prevention of rupture of the tube-cyst. The proposal of such a method of treatment, and the almost universal satisfaction that has attended its employment up to the present moment, must be regarded as the strongest evidence that could possibly be offered of the close study of the subject and of the great value of the principle.

It is to be clearly seen, from the acknowledged success attending the employment of the principle, especially in tubal pregnancy, that, in skillful hands, it will at no distant day supersede entirely the plan of quietly trusting to luck, by means of which so many valuable lives have been sacrificed.

But the difficulties surrounding this practice, notwithstanding its wider range of application, can not be compared with those attending the operation of laparotomy. Each principle, however, has its sphere of usefulness, and the reasonable application of electricity, as indicated by the con-

clusions of careful diagnosis, can not fail in the future to yield the most encouraging clinical results.

It should unquestionably be the rule, in all cases of extra-uterine gestation seen in the earlier months, to destroy the life of the fœtus, and, even in cases where this condition is suspected but the diagnosis is open to doubt, to apply electricity, which, for safety and certainty, is emphatically *the remedy*. With this principle more widely recognized, there will be fewer instances demanding a resort to the graver procedure of laparotomy, and it is to be hoped that the matter of diagnosis and the employment of this mode of treatment may eventually become so accurate and effective that there will be no occasion for the latter operation.

A word now with regard to the ætiology and mechanical philosophy of extra-uterine pregnancy—points which I need scarcely say are difficult of explanation. The belief has become generally accepted that women with long-enforced sterility after fruitfulness are more prone to ectopic gestation than those passing through the fruitful period of their lives in the regular exercise of their procreative functions; but exactly why a certain number of widows should be more liable to it than an equal number of married women no satisfactory reason has as yet been assigned, and probably never will be. I think, myself, the explanation is to be found in the backward displacements of the uterus.

I maintain that in retroversion, and especially in retro-lateroversions of the organ, one ovary is often dragged down and fixed, with a corresponding displacement of the Fallopian tube, at a lower plane in the pelvis than that of the same structures on the opposite side, and that, as a result of such malposition, there is necessarily more or less rolling or turning of the uterus to the affected side. By this form of displacement not only is the axis of the uterus placed on a horizontal line with that of the vagina, but the entrance into the uterus of the Fallopian tube on the same side is depressed to a lower level than the opposite one—a change of relationships in all these parts and in their aptitudes, as regards the cervical canal, the plane of the cavity of the uterus, and the utero-tubal orifice, highly favorable to the entrance of the spermatozoa and their migration on one continuous line. In the reversed order of relationships of the same structures, and from the same anatomical considerations, the aptitude of the affected Fallopian tube in its lower or fimbriated extremity to receive and to convey the ova from the corresponding ovary is in a like degree diminished. From the movements, then, of the spermatozoa out of the vagina, almost unopposed by physical obstructions and the operation of gravity, and of the ova coming from the corresponding prolapsed and fixed ovary almost completely opposed by the law of gravity, it is easy to see that the chances, mechanically considered, are altogether in favor of the former reaching the depressed utero-tubal orifice instead of the elevated one, and falling into the Fallopian tube itself, as into a deep well, to meet, at some point in their descent (perhaps in the fimbriated extremity of the tube or upon the surface of the corresponding ovary), an ascending or stationary ovum or ova ready in some one of these localities for the impress of fructification or conception and gestation.

To these pathologico-physiological conditions of the uterus and its annexa, with the physical phenomena of abnormality regarding the performance of their functions pointed out, may we not therefore reasonably ascribe the occurrence of ectopic gestation, rather than to the length of time of widowhood after fruitfulness, the latter itself presupposing the sequelæ of retro-lateroversion, the first link in the chain of morbid results?

What the force is inherent in the two essential elements to conception to insure their movements independently of natural laws, and to impart the spark of life when their contact is effected in situations other than in the uterine cavity, I do not pretend to know. This remains for the physiologist to explain.

But, as proof of the possibility of the spermatozoa in their migrations in the vagina and uterus, surmounting seemingly the gravest obstacles in reaching their usual destination in the latter organ, it is only necessary to refer to the well-attested instances on record of impregnation taking place without rupture of the hymen, among which are the notable examples recently cited by Professor Karl Braun. I have myself seen extraordinary instances of their power to accomplish their work of impregnation in the face of the greatest obstacles. In one case in my practice which I now recall there was a continuous flow of urine from the os uteri all the while, arising from a vesico-utero-cervical fistule high up. Here they stemmed the opposing current of urine, so to speak, and reached their destination in the cavity of the uterus, with the result of conception, gestation, and safe delivery of child. In another case which I saw with Sir Spencer Wells in Heidelberg, in the autumn of 1874, in the practice of the late Professor Gustav Simon, a vesico-vaginal fistula, complicated with stenosis of the vagina, had been operated upon by this eminent surgeon for incontinence of urine, a year or two previously, by shutting up the mouth of the vagina (kolpopleisis) about half an inch behind the meatus urinarius. The operation was successful, with the exception that an orifice of the size of a cambric needle was left, and, strange as it may seem, the spermatozoa entered through this minute fistulous tract, traversed the vagina, though stenosed and acting as the receptacle of the urine from the bladder, and finally made their entrance through the os uteri into the cavity of the organ. The result was conception and gestation; but a sad termination, as might well be imagined, attended the labor. In both of these cases there was marked retroversion of the uterus.

This digression may be thought irrelevant, but the facts presented are interesting, I think, in connection with my subject, as showing some of the possibilities of normal pregnancy under circumstances seemingly but little less difficult of explanation than those overhanging the causation of extra-uterine gestation.

I shall now present the histories in detail of my two cases of extra-uterine pregnancy, their treatment and results.

CASE I.—*Right Tubal Pregnancy, end of the Twelfth Week; Rupture of Cyst; Profuse Hemorrhage; Laparotomy on the Thirteenth Day; Death.*—This case I first saw, August 16, 1884, in consultation with Dr. R. Burns, of Honesdale, Pa., from

whose very full report I am permitted to present the following points regarding the history and treatment:

Mrs. G., of Honesdale, aged thirty, says that she first menstruated at the age of thirteen, married at nineteen, miscarried at twenty-four, and was delivered of a full-term child at twenty-seven. The labor was difficult, and instruments had to be used, but her health was afterward good. She married the second time, at twenty-nine, in October, 1883.

On May 9, 1884, menstruation, which had been regular and normal during all her married life, except when pregnant, appeared for the last time, and continued four or five days as usual. On June 6th it appeared for one day only, and on July 4th it failed entirely. She now had slight nausea, and after a week or two she began to have colicky pains in the right iliac region, with a slight sanguinolent discharge. On July 23d, her pains being more extended over the lower part of the abdomen than usual, she discharged from the vagina a membranous substance about one third the size of the hand. A digital examination by Dr. Burns showed the uterus to be enlarged and tender, with a patulous os, and, by conjoined manipulation, considerable pain was caused in the right iliac region. On August 3d the patient walked to church and back, about a mile altogether, and afterward suffered from severe pain in the back and right side. A hypodermic injection of morphine was required to afford relief. After this colicky pains, attended by more or less nausea and vomiting, recurred every few days until Saturday night, August 9th, when they became so violent as to require several successive hypodermic injections of morphine before they could be relieved. Next morning the patient was much prostrated. She looked pale, and suffered from nausea and vomiting, with feeble pulse and vesical tenesmus. A digital examination then made showed the uterus to be crowded forward and upward behind the pubes, and Douglas's pouch to be filled with a soft, doughy mass protruding into the vagina, extending upward into the right iliac region, and pressing the uterus to the left side. The uterus was enlarged, being about four inches long, while its fundus could be easily felt two or three inches above the brim of the pelvis. When pressure was applied, great pain was complained of across the entire lower part of the abdomen and in the vagina. There was a bloody discharge from the latter all the while. The diagnosis naturally made was that of pelvic hæmatocele arising from bleeding vessels probably situated in the right broad ligament.

The patient was kept quiet with opiate enemas, and given liquid food when the stomach would tolerate it. Progress was satisfactory for a couple of days, there being no apparent increase of the size of the pelvic mass. On the third day, August 12th, the patient was seized with the same violent pains as at first, for which a hypodermic injection of morphine, and afterward chloroform by inhalation, were used before relief was obtained. After this attack there was a perceptible increase in the size of the supposed hæmatocele, as well as an augmentation of the prostration, nausea, and vomiting, with more feeble pulse, though there was little or no elevation of temperature. Retention of urine now occurred, requiring the use of the catheter. On August 14th there was a similar attack, with an aggravation of all the symptoms, and the same treatment was repeated.

On August 16th, two days later, in response to a telegram, I first met Dr. Burns in consultation in the case. From my examination I found the ordinary signs of pregnancy present, including the cessation of regular menstruation for nearly twelve weeks, deepened aureole, and increased prominence of the surrounding papillæ. These, associated with the foregoing history, all pointed, as I conceived, to tubal pregnancy and to rupture of the tube-cyst, the hæmorrhage having caused the doughy

mass in Douglas's pouch. I stated my views to Dr. Burns, and said that, had I seen the patient soon after the rupture of the cyst occurred, I should have recommended immediate laparotomy in order to clear the pelvic and abdominal cavities of blood, and secure the bleeding vessels, as sanctioned by the highest authorities; but that, as seven days had then elapsed, and the favorable condition of the patient, as shown by an improving pulse of 90, without elevation of temperature, warranted the hope of an ultimate recovery without an operation, I should advise waiting for further developments. The doctor coincided with me fully in the latter view, and with this understanding I returned home.

On Tuesday evening, August 19th, Dr. Burns apprised me by telegraph of the failing condition of the patient, and requested me to come prepared to operate. When I arrived at Honesdale the next afternoon I found the symptoms very markedly changed for the worse. The most pronounced of these were persistent and agonizing nausea and vomiting, with a small, feeble pulse of 110, which indicated further loss of blood, and this unfavorable change had been going on for about forty-eight hours. On examination, I discovered that, while there had been no perceptible increase of the mass of blood behind the uterus during my absence, the evidences of its extension in the right iliac and hypogastric regions were manifest. Here I was able to note with precision the increased size, and to map out through the abdominal walls a valuable diagnostic feature which I could not then explain. This was an apparently round body of about one third the size of the fist. It stood on a level with the fundus of the uterus, and was quite immovable. Around it I could detect a peculiar condition somewhat similar to that of emphysematous pulmonary tissue when compressed between the fingers.

The only thing now to be done, I conceived, was to open the abdomen and secure the bleeding vessels, and, accordingly, at three o'clock in the afternoon of August 21, 1884, the patient being under the influence of ether, the operation was begun with all the usual antiseptic precautions. There were present Dr. Burns, Dr. Reed, Dr. Niles, and Dr. O'Connell, of Honesdale, and my assistant, Dr. R. B. Talbot, of New York. On making the usual incision between the umbilicus and pubes, and opening the abdomen, there was a gush of a pint or more of bloody serum. After this was over, and the peritoneal cavity exposed, clots of blood were to be seen among the intestines in every direction. There were no plastic exudations or other evidence of peritonitis. On examination, I now found the hard, rounded, immovable body, previously felt through the abdominal wall, to be the right Fallopian tube, greatly distended and looking like a large sausage doubled upon itself. The corresponding ovary, which could not then be felt, was fixed deep in the pelvis, and to it the upper part of the funibriated extremity of the tube seemed to be adherent, thus accounting for its peculiar form. So tense and resisting was this distended portion of the tube that no movement of it in any direction could be made during my search for bleeding vessels. Next I passed my hand into Douglas's pouch, expecting to find there the large blood-clot as diagnosed from the vagina, but in this I was mistaken, the clot here being felt in front through an intervening membrane. I then again turned my attention to the distended Fallopian tube, this time passing my index-finger below and under the concave side of it through what seemed to be an open space. Here, at a point near the middle of the tube, the finger entered a rent through which there was a direct communication of its contents with the peritoneal cavity and with the *cul-de-sac* below containing the blood-clot, but no fetus was discovered.

From this point I now directed all of my fingers and then

my whole hand into the *cul-de-sac*, where I found the blood-clot for which I had vainly searched in Douglas's pouch. I scooped out handful after handful of dark clotted blood—twenty ounces or more—until finally I reached the bottom of this abnormal *sac*. The boundaries of this were the detached peritonæum behind, and the uterus with the upper part of the posterior wall of the vagina in front, the usual situation of a pelvic hæmatocele.

Having thus finished this step of the procedure, I, for the third time, directed my attention to the enlarged Fallopian tube with the intention of removing it, and in that way controlling the hæmorrhage which was the result of the rent in it. The tube was now found to be quite movable, and without difficulty I succeeded in applying a ligature around the broad ligament between the distended portion of the tube and the uterus, and half an inch from the latter. This being done, the structures were divided on the distal side of the ligature. Another ligature was then thrown around the structures outside the distended portion of the tube as near as possible to its fimbriated extremity. Here the division of the parts was made on the proximal side of the ligature, including the ruptured portion of the tube. This completed the excision of the injured and distended portion of the tube, and afforded complete control of all the bleeding vessels.

The abdominal cavity and the emptied *cul-de-sac* described were thoroughly cleansed, and a drainage-tube placed in the latter. The abdominal incision was closed in the usual way, and antiseptic dressings were used. The operation lasted one hour, and the patient received during the time one ounce of brandy hypodermically. She came out from the influence of the ether fairly well, considering the circumstances, and her general condition was thought to be hopeful for several hours; but her pulse and temperature soon began to go up, the former beating from 140 to 150. In addition to this, her almost incessant nausea and vomiting, from which she had suffered so terribly before the operation, returned; so that we had scarcely any hope of a favorable issue almost from the beginning of the after-treatment. Nevertheless, nutritive and stimulating enemata, with quinine and opium, were perseveringly used, and everything possible was done to quiet the stomach; but it was all to no purpose. Her condition gradually grew worse, and she died thirty-three hours after the operation.

I have here in this jar the distended portion of the Fallopian tube, showing the original bed of the fœtus, and am indebted to Dr. H. C. Coe, Pathologist of the Woman's Hospital, for the examination and report upon the specimen. He describes it as follows:

"Length of specimen 9 ctm., of which 6 ctm. belong to the tube, 3 ctm. to the portion of the blood-clot, which projects beyond the torn end of the tube. Weight, 80 grammes.

"The specimen has a regular sausage shape, both ends being smoothly rounded off. Two portions may be distinguished—one a blood-clot, being firm, non-elastic, and without any semblance of fibrous structure, the other being evidently membranous in character.

"The dilated tube contracts toward its proximal end, where there is a small portion of the original canal (about $1\frac{1}{2}$ ctm. long) which admits a fine probe for a short distance. On making a section through the entire mass (along what was doubtless its upper surface), the following appearances are presented:

1. "The tube itself expands suddenly $1\frac{1}{2}$ ctm. beyond its proximal end, the walls being greatly thinned, and the original character of its lining lost. It is filled with a blood-clot, which is continuous with the mass which protrudes from its torn distal end. The clot has contracted so that it is not everywhere in close contact with the sides of the tube.

2. "At the proximal end of the tube there is a sort of partition, apparently formed by a fold in the tube. This would have acted as a barrier to the passage of blood inward toward the uterus; hence the clot is abruptly rounded off at this spot."

I have said in the description of the operation that no fœtus was discovered. This is liable very often to happen on account of the escape of the body into the peritoneal cavity, or of its becoming disintegrated and lost in the mass of clotted blood, which in this case amounted to over a pint. Mr. Tait had the same experience in nearly all of his cases. The clot found in the distended tube, constituting a true *hæmatosalpinx*, resulted from the bleeding vessels of the ruptured point in the cyst after the escape of the fœtus. The partition formed by the fold near the uterine end of the tube was the result, no doubt, of nature's provision for the bed and protection of the impregnated ovum. The loop of silver wire on the under side of the specimen indicates the proximal angle of the rupture of the cyst.

CASE II.—*Abdominal Pregnancy; Death of the Fœtus about the Sixth Month; Normal Pregnancy about Three Years and Two Months afterward; Death of the Child in the Eighth Month; Delivery with Forceps; Remains of the Fœtus in the Abdomen removed through an Opening in the Posterior Wall of the Vagina at the Same Time; Recovery of the Patient.*—I was requested by Dr. John Burke, of this city, to see this case in consultation, September 18, 1884, and he permits me to report it as follows:

Mrs. K., aged thirty-eight, who had been delivered of six living children without difficulty or injury to herself, became the subject of abdominal pregnancy after a regular menstrual period, which terminated January 24, 1881. She stated that the flow had always appeared three or four days in advance of the time, but that the duration was natural. On March 14th, seven weeks from the cessation of her last period, she was awakened out of a sound sleep about midnight by a violent pain across the lower part of the abdomen, soon followed by severe nausea and vomiting. She did not remember on which side the pain was greatest. A physician in the neighborhood was called in, who administered a hypodermic injection of morphine, which gave prompt relief. For two or three days there was tenderness of the abdomen, attended by a slight bloody discharge from the vagina. After this the same physician made a vaginal examination, and discovered, as he thought, retroversion of the uterus, for which he introduced a pessary. The instrument, however, was worn only a few days, so much pain and discomfort being caused by it that it had to be removed. This was done March 28th by Dr. Burke, the family physician, who was now called in for the first time, and who was obliged to give a hypodermic injection of morphine for the relief of pain. This was about nine weeks after the date of the last menstruation, in January. The bloody vaginal discharge still continued, and an examination now revealed the existence of a large and rather elastic mass, which was painful under pressure, situated to the right of the uterus. There was also slight enlargement of the latter, and the organ was pressed to the left side. After a few days the abdominal pains in the right iliac region disappeared, together with the bloody discharge from the vagina. The patient had no knowledge of a discharge of anything like a decidua membrane, nor did she refer to symptoms indicating the probability of pregnancy. Dr. Burke's diagnosis was pelvic hæmatocele.

In the latter part of June, 1881, the patient went to the seaside, where she rapidly improved in health and strength. In August, about seven months after her last menstrual period, she

noticed a slight show, which she regarded as a re-establishment of the function. Her size at the time, she thought, was that of a woman at the fifth or sixth month of pregnancy.

In September she returned to the city. Dr. Burke now made an examination, and discovered low down in the abdomen a tumor, having (as felt through the vaginal wall) all the characteristics of a fetal head. Its size was that of the head of a child of five or six months' growth, and it presented behind the uterus. The case was seen in consultation a few days later by an eminent gynecologist of this city, who declared the existence of abdominal pregnancy.

Soon after this, October 6th, menstruation came on naturally, and the patient felt perfectly well, with the exception of an occasional attack of neuralgia in the right side of the face. Indeed, so well was she at this time that she did not wish any further notice taken of her case, though the enlargement of the lower part of the abdomen still continued.

In the autumn and early winter of 1883, nearly three years after this pregnancy, her general health in the intervals between her neuralgic attacks, which had continued up to this time, was better than ever before. The enlargement of the abdomen seemed to her by this time to be greatly reduced, and much lower in situation.

In the last week of January, 1884, her menstruation appeared as usual, lasting four days; but it did not return in February, March, or April. At this time the facial neuralgia became more frequent and severe, and soon the pain extended to the teeth, and thence to the whole side of the body as far down as the toes. A dentist was consulted, who extracted several teeth, including some sound ones, but with the result of causing but little abatement of the suffering. Owing to the unpleasant effects of morphine upon the patient, Dr. Burke put her on the use of Duquesnel's aconitine, the ninetieth of a grain three times a day, which was followed very soon by marked diminution in the severity of the pain.

In this way matters went on a few months longer, when the patient's attention was directed for the first time to an increase in her abdominal enlargement; but, feeling a repugnance to having an examination made as to the cause of the change, she decided not to ask medical advice.

It was not until September, over seven months after the last appearance of the catamenia, that Dr. Burke was consulted. He, of course, insisted upon an examination, and the result was that he found in the abdomen a somewhat solid and rolling body, with an unusually marked degree of prominence anteriorly. Having three years before closely watched the case for months as one of abdominal pregnancy, he naturally concluded that the present enlargement of the abdomen might be attributed in some way to the products of that conception.

On September 18, 1884, several days after his examination, he requested me to see the case in consultation. The former abdominal pregnancy being now overshadowed by the actual existence of a new growth, my attention was directed especially to this.

From the general good health of the patient, and the presence of most of the rational and physical signs of pregnancy, as well as from the evidence afforded by palpation, I was at once led to eliminate the existence of uterine and ovarian disease, and to decide that the enlargement was probably due to the presence of a fetus *in utero*. I even thought I heard the pulsations of the fetal heart, but in this I was mistaken, as the result proved. Further examination, *per vaginam*, however, disclosed the fact that the patient was actually in labor.

Two peculiarities of the presentation of the child attracted my attention: 1. The prominence of the head felt through the expanded anterior segment of the cervix uteri; and, 2. The

difficulty of reaching the os uteri with the finger. Only the anterior margin of this could be touched, and this condition of affairs I attributed to the forward inclination of the body of the uterus, in consequence of the presence of the remains of the abdominal fetus.

After this Dr. Burke, with his friend, Dr. McSweeney, conducted the labor, and delivered the child, with forceps, after eight or ten hours. The child proved to be of about seven and a half months' growth, and had evidently been dead for several days. Immediately after the completion of labor an uneven and projecting mass presented in Douglas's pouch, which was recognized through the vaginal wall as the remains of a fetus encysted in this locality. Dr. McSweeney, with the sanction and approval of Dr. Burke, made a longitudinal incision just below the cervix uteri into the cyst, and with a pair of forceps removed the several portions of it. The patient recovered without an untoward symptom, and when I saw her with Dr. Burke, some three weeks ago, she was the picture of health, having even lost her facial neuralgia. An examination showed the uterus to be but slightly enlarged and anteverted. Only the line of cicatrization in the posterior *cul-de-sac* remained to indicate where the incision had been made for the removal of the abdominal fetus.

Dr. Burke's reasons for removing the encysted fetus, as was done, was that it had presented at the most favorable point possible for an operation, and that he feared the future health, and probably the life, of the patient might be jeopardized by a longer continuance of its remains in the abdomen.

I present here the products of the abdominal pregnancy, preserved by Dr. Burke, and I have also in alcohol the intra-uterine product, a well-formed child of seven and a half or eight months' growth, which possesses no other interest than the fact of its conception, development, and delivery during the time of the presence of the former fetus in the abdomen.

The first specimen, consisting of wet and dry preparations, is interesting in at least three particulars: *First*, in having sojourned in the abdomen encysted from July, 1881 (when death took place at six months), to September 18, 1884—about three years and two months—and in having been removed, through an incision made into the cyst through the posterior wall of the vagina, a few minutes after the extraction of the normal fetus with forceps; *second*, from the fact of the soft parts having been almost entirely removed by absorption, there remaining scarcely anything save the bones, tendons, dura mater, and some portions of the skin; and, *third*, in having caused the mother, prior to and during her subsequent pregnancy, so little trouble or inconvenience, the general health remaining good the whole time indicated, with the exception of the paroxysms of neuralgia mentioned. The fingers and toes and the features of the face are easily distinguishable in the wet preparation.

The points brought out in the preceding pages justify, I think, the following conclusions:

1. That retroversion and retro-lateroversions of the uterus, and the consequent changes in the relationship of its appendages, contribute largely toward explaining the causation of extra-uterine pregnancy.

2. That extra-uterine pregnancy probably has its seat originally in one or other of the Fallopian tubes, and that the abdominal varieties of it occur afterward from rupture of the tube (Tait), or by partial or complete escape of the

impregnated ovum from the fimbriated extremity of the same.

3. That, after completing the diagnosis of tubal pregnancy between the seventh and fourteenth weeks, it is of urgent importance in all cases to destroy the life of the fœtus, without delay, by electricity, the surest and safest method at our command, in order to guard the individual against the immediate dangers of rupture of the cyst, now liable to take place at any moment.

4. That the practitioner, if he does not himself feel competent to meet the threatened danger of rupture of the cyst by prompt surgical interference, should at once summon to his aid a surgeon prepared to carry out his wishes at a moment's notice.

5. That the surgeon, where rupture of the cyst occurs, as indicated by the usual symptoms of shock and loss of blood, should open the abdomen and secure the bleeding vessels without delay, success in all cases depending on the promptness and thoroughness of the procedure.

6. That the differentiation of the particular variety of ectopic gestation existing is of no consequence at this early stage, the treatment before and after the rupture of the cyst being the same in all cases.

7. That, when abdominal pregnancy is diagnosed at a later period of gestation, whether seated partially in the fimbriated extremity of a Fallopian tube or entirely within the peritoneal cavity, electricity should still be promptly employed, on the assumption that the earlier the life of the fœtus is destroyed, the less grave will be the remote dangers arising from disintegration, absorption, suppuration, ulceration, and the use of the knife.

8. That, in all cases of abdominal pregnancy, the fœtus becomes encysted more or less completely, and that, whether its life be destroyed artificially, or it dies before or at the full term of gestation, it is liable to complicate a subsequent normal pregnancy by obscuring its diagnosis and seriously interfering with natural labor.

9. That, when normal labor occurs with pre-existing abdominal pregnancy, it should be allowed to progress to its natural termination, the practitioner, of course, assisting the delivery with instruments when demanded; but that, in the event of the dead fœtus presenting in Douglas's pouch as an impediment to the normal labor, or as a prominent projection from the same locality into the vagina, immediately after the completion of labor the cyst should be opened and emptied of its contents, the delivery of both fœtuses thus being completed at the same sitting.

I will now briefly refer to a third case of extra-uterine pregnancy which I saw in consultation with Dr. J. F. Chauveau, of this city, November 10, 1884, for the purpose simply of showing how the treatment with electricity was carried out, it being too soon after the occurrence to report it in full. It happened in a young woman, aged twenty-five, in the twelfth week of her second pregnancy, and was found to be of the tubal variety, on the left side, the uterus being retroflexed. The diagnosis was clearly made out, in the recumbent and knee-face positions, even to the extent of proving with the finger the vacuity of the uterus. The result of the consultation was the resolution to destroy the life of the

fœtus with as little delay as possible. Dr. A. D. Rockwell was called in to apply the electricity, November 13th, the form preferred by him being the interrupted galvanic current. The negative electrode was applied *per vaginam* to the pelvic mass to the left of the uterus, and the positive over the enlargement in the left iliac region, at its most painful point, the current being thus established through the structures. A series of twelve cells, gradually increased to fifteen, was employed, and the interruptions were about one hundred per minute. The *séance* lasted five minutes, with momentary intervals of rest. The patient bore the treatment well, complaining of little or no pain. Four applications were made from November 13th to 17th, the first three on successive days, and the fourth after an interval of one day.

Dr. Rockwell's opinion was that one application, as above described, was sufficient to destroy the life of the fœtus; but, as there was no way of determining this fact positively, he thought, in order to be sure, the patient should be subjected to at least four *séances*.

Note, December 9, 1884.—With this the treatment was concluded, and the patient believed to be protected against the dangers of rupture of the cyst; but, about sixty hours after the last *séance*, she was seized with another violent paroxysm of pain in the same region as before, which soon extended to the whole lower part of the abdomen, and even to the corresponding thigh. I now saw the patient in consultation with Dr. Chauveau the second time, and, from the great tenderness still felt in the parts, we concluded that the treatment had not been effective in the object of its use. Dr. Rockwell was accordingly requested to see the case again, which he did November 20th, and he then made a fifth application of galvanism, with the same number of cells and in the same way as before described. The result so far has been entirely satisfactory.

I saw the patient with the family physician this afternoon, and made an examination. She had just passed her menstrual period, menstruation having before been absent for nearly four months. It is now twenty days since the last severe paroxysm of pain, and she feels quite well, except for weakness resulting from confinement to bed. The uterus is almost natural in size and quite movable, but it is still retroflexed, with a well-defined enlargement above and to the left side of it. The enlargement seems to be of about the size of a Sicily orange. It is considerably more movable, and very much less painful under conjoined manipulation, than it was at my last examination. From these circumstances and characteristics, therefore, I think it may be clearly inferred that the life of the fœtus was destroyed at the fifth *séance* with the galvanic current, and that no further trouble from its growth need be apprehended.

The Diagnosis of Pelvic Inflammation by the Temperature of the Urine.—Betz ("Memorabilien") states that the temperature of the bladder, and hence that of the urine contained in it, is affected by that of the surrounding tissues. Therefore, in inflammatory conditions of the pelvic cellular tissue and peritonæum, the patient often complains that her urine feels "hot." If cystitis can be excluded, it is quite probable that this symptom points to some inflammation in the neighborhood of the bladder.

THE CURETTE;

ITS PLACE AND ITS POWER IN
UTERINE THERAPEUTICS.*

By GEORGE T. HARRISON, M.D.

THE opinions of the medical profession with regard to the value of the curette have been widely at variance from the time it was first devised to the present day. By some extolled as of inestimable utility, by others it has been decried as an instrument excessively hazardous in its application. Thus Aran,† in speaking of the use of the curette, calls it "cette pratique hasardeuse." Becquerel ‡ says: "This means (*rachement*) has always seemed to me barbarous."

Scanzoni § observes that "the curette recommended by Récamier and Sims for the abrasion of granulations developing in the uterine cavity is an instrument based on quite erroneous theories, and is therefore devoid of all practical utility." "We fully concur," he continues, "in the views of Hildebrandt when he says: 'Bad defects may be evoked in the sound portions of the uterus by these sharp-edged instruments, while the diseased portions remain intact; they do not, therefore, fulfill their proper purpose, with all the harshness of their action.'"

The language of Dr. Emmet || is equally positive in condemnation of this instrument. "As regards the instrument of Dr. Sims," he remarks, "I honestly believe that the ingenuity of man has never devised one capable of doing more injury. . . . I have known peritonitis, cellulitis, pelvic abscess, and even death, to occur on removing these growths from the uterine canal with a curette, and in every instance the operator was dexterous in the use of the instrument. My views are based on a dearly-bought experience, and I believe that no man has a right to place the life of his patient in jeopardy by the use of either of these instruments in the treatment of this condition."^ Dr. Sims, ^ on the contrary, when he so modified the original instrument of Récamier as to make it more effective and certain in application, considered that he had laid the profession under lasting obligations to him, and that no contribution he had made to gynecology was so important as his reintroduction into practice of the use of the curette. Dr. A. Martin, j of Berlin, in the concluding lines of his article upon intra-uterine treatment, gives this testimony to the value of the application of the curette: "From these observations of mine, I think that I am justified in urgently recommending the use of the curette in cases of morbid conditions of the mucous membrane of the body, whether they are connected with pregnancy or not. I consider this procedure as certain in its final result, as devoid of danger, and

not more circumstantial than certainty of success and freedom from danger demand."

In these circumstances it may not prove an altogether unprofitable study to examine the question anew, in the light of modern investigation and experience.

Our problem is twofold—first, to determine what affections of the uterus demand the application of the curette, and, second, to ascertain the best method of using it in an appropriate case. In 1846 Récamier devised an instrument that he called the curette for removing granulations from the cervical canal. The procedure he termed *curetage*. Four years later he modified the construction of his instrument, and extended its application to the removal of granulations, as well as portions of the ovum left after an abortion, from the uterine cavity. Simon made use of a similar procedure in the case of malignant neoplasms of the uterus, and invented an instrument like a spoon, with which his name is generally associated.

Dr. Sims, in his work, "Notes on Uterine Surgery," introduced to the profession a modification of Récamier's instrument, which can be bent so as to conform to the direction of the uterine cavity. Impressed with the dangers attendant upon the use of the Sims instrument, Dr. Thomas devised a further modification, which he calls the wire curette. This last instrument has been widely adopted into practice, and, especially in this country, is the form of curette most generally used. My own experience is mainly with Sims's curette and Thomas's. Simon's spoon I have only used in malignant growths. In attempting now the solution of the problem first propounded, it is necessary to appeal to analogous affections in other parts of the body, and the surgical procedures adopted for their relief, to give us a basis on which to rest our therapeutical principles. Says Prowchonic: * "We make use of these abrading and scraping instruments, so-called sharp spoons (essentially like curettes, and therefore often so called, and still oftener applied in place of them), for the removal of soft, spongy masses, whether in the form of tumors or purely granular, which have formed themselves pathologically on a normal, or at least almost normal, anatomical base, skin, muscles, fasciæ, glandular walls, bony cavities. Surgery teaches us, also, that these particular instruments form at the same time the best guide to the recognition of the boundaries of such destructive masses, taking away in their application nothing from the normal basis-tissue, and manifesting to our sense of feeling, sometimes also to the sense of hearing, although the field of operation may not be made accessible to the eye, when we have attained to the normal basis-tissue. According to the analogy of its surgical use, the sharp spoon is indicated wherever a degeneration of the mucous membrane has exhibited itself on a normal, or almost normal, anatomical basis—that is to say, the uterine muscle—a degeneration of such a character as would prompt the surgeon, in other parts of the body, to the application of the sharp spoon, consequently, granulations, or new formations, whose transition into the normal tissue is not accurately cognizable to the eye, or feel of the finger, or instruments of another kind, but whose fundamental removal up to the normal basis

* Read before the New York State Medical Association, November 19, 1884.

† "Leçons cliniques," etc., p. 472.

‡ "Traité des maladies de l'utérus," p. 432.

§ "Kränkheiten der weibl. sexualorgane."

|| "Principles and Practice of Gynecology," 2d ed., p. 617.

^ Dr. Emmet has reference to Récamier's curette, Sims's modification, and Simon's spoon.

^ Oral communication.

^ "Zeitschrift für Geburtsh. und Gynäk.," Bd. v, Heft 1.

* "Sammlung klinischer Vorträge," p. 1513.

forms the therapeutic demand of the case in hand." The researches of Düvelius,* characterized as they are by scientific exactness, have fully shown, in the first place, that, by the energetic application of the curette, material can be obtained adequate to the purpose of microscopic diagnosis with respect to the morbid process taking place in the uterine mucous membrane. Secondly, that, when the curette has removed the degenerated uterine mucous membrane, out of the remains left behind a regeneration of the mucous tissue takes place, a new and healthy mucous membrane being formed by means of the young cells proliferating from the deeper parts; that cicatrices are not produced in consequence of the action of the curette. Thirdly, that *amenorrhœa* and *sterility* are not caused by the curette, and that, on the contrary, many women who had been formerly sterile have conceived after its application. Applying these principles to uterine affections, we may say that the use of the curette is indicated in the following morbid states of the uterine mucous membrane:

1. In *sarcomata* and *carcinomata* of the inner surface of the body of the uterus—when, for any reason, more radical operative procedures are contra-indicated—the use of the curette yields here very satisfactory results, though of a palliative character.

The hæmorrhage and sanious discharge may in this way be relieved for a considerable length of time. The Sims curette in this class accomplishes the object in view most effectively. In a case of round-celled sarcoma of a diffuse form, confined to the mucous membrane of the uterine body, I prolonged the life of a patient for several years by the repeated application of the Sims curette. In carcinoma involving the cervix, the curette has but a limited application, as other methods of treatment are here required.

2. In those puerperal conditions of the endometrium evoked by retention of the remains of the ovum or decidual membranes. When delivery has occurred at term, and symptoms during the puerperal state point to the retention of the placenta, or pieces of the membranes, it is not necessary, as a rule, to resort to the use of the curette. In such an event the patient can be put under the influence of an anæsthetic, and the finger may be passed into the uterine cavity, and the offending parts removed manually. Or we may resort to the use of irrigation of the uterine cavity with hot water, to which an antiseptic is added. In some rare cases, however, these methods may fail us, or be inapplicable, and then the curette comes into play, and especially Thomas's wire curette. In a case of secondary hæmorrhage occurring three weeks after delivery I resorted to the application of the curette, and, after removing some shreds of decidual membrane, had the gratification of seeing the hæmorrhage cease at once, and rapid involution ensue. A much wider field, however, for the curette opens when pregnancy is interrupted in the first three or four months. The manual removal of portions of retained ovum or decida in such circumstances may often be achieved, but it nevertheless occurs that this method can not be adopted. For example, the physician may be called some

time after the expulsion of the ovum, and find the uterus too firmly closed to admit the passage of the finger. There may also be considerable narrowness of the vulva and vagina, and the neck may be rigid and unyielding. The hot-water intra-uterine injections may also fail to detach the firmly adherent remnants. In these cases the wire curette subserves a most excellent purpose. As an illustrative case I may cite the following:

I was called the 1st of last September to see a young married woman, whom I found suffering from a profuse uterine hæmorrhage. She informed me that an abortion had occurred in the month of June, at about the third month of pregnancy; that at the time of its occurrence she had lost a great quantity of blood, and had since been scarce free from a show, and that at times the bleeding was so free as to make her entertain grave apprehensions lest she should bleed to death. A homœopathic physician had been in constant attendance upon her, but had not succeeded in controlling the hæmorrhage; on the contrary, according to her statement, he made no effort in that direction, as he said that it was necessary for the blood to come away. The patient was pale and exsanguinated, and exceedingly nervous. Examination *per vaginam* revealed the fact that the uterus was very much enlarged, and, consequently, was in a state of subinvolution. Assuming that the symptoms were due to retention of portions of the ovum, I made use of the wire curette of Thomas, and extracted several pieces—one as large as the end of the thumb. I need scarce add that the hæmorrhage was checked at once, and that involution afterward took place rapidly.

3. In the various forms of endometritis, especially those characterized by menorrhagia and metrorrhagia, in which the degenerated mucous membrane has given rise to fungous granulations, the scope of the curette's application is here an extensive one. The pathological anatomy of chronic endometritis has lately been made the subject of thorough investigation by Ruge.* A condensed statement of his researches may not be uninteresting. The mucous membrane in chronic endometritis is, according to him, more or less strongly proliferated, vascular, soft, and spongy. The thickness is three to four millimetres, but may even attain to the thickness of a centimetre, nay, even exceed it. The inner surface of the mucous membrane, looking to the cavity of the uterus, is often smooth in spite of active proliferation; in other cases slightly papillary, like velvet, or elevated in the form of protuberances, proliferated to irregular rolls, or even polypoid outgrowths. The uterine cavity is often filled up completely by these spongy masses. Microscopically, the different forms of chronic endometritis are to be discriminated, according to their anatomical composition, into *glandular*, when the proper parenchyma of the mucous membrane, the glandular apparatus, is concerned; into *interstitial*, when the stroma plays the chief rôle, and into the *mixed forms*. The glandular endometritis is distinguished by a strong proliferation, and multiplication of the epithelial cells. There are two varieties, *glandular hypertrophic endometritis*, and *glandular hyperplastic endometritis*. In the interstitial endometritis the pathological changes are to be found in the stroma it proliferates, so that in the more recent cases proliferation of the cellular constituents is

* "Zeitschrift für Geb. und Gynäk., Bd. x, Heft 1.

* See Schröder's "Krankheiten der weiblichen Geschlechtsorgane," p. 111.

more apparent; in the older ones, the framework, the intracellular substance exhibits the pathological alteration. In the mixed forms (endometritis diffusa) the inflammatory process affects all the parts, although not uniformly. Olshausen's chronic hyperplastic endometritis (endometritis fungosa) he regards as varied in its composition. The proliferation of the mucous membrane, that can here assume the greatest dimensions, is generally diffuse, but may be an almost purely interstitial form, so that the glands are widely separated by the strongly proliferated stroma, and at the same time become primarily and secondarily ectatic; in another case the affection is a purely hypertrophic glandular, no multiplication of the glandular ducts taking place, although a great enlargement of the entire glandular duct necessarily went hand in hand with the proliferation. There can also be an actual hyperplastic glandular endometritis, an actual multiplication of the glandular ducts. The most important symptom of chronic endometritis is hæmorrhage, typical or atypical. In some forms dysmenorrhœa is complained of.

In another class of cases the pain is absent during menstruation, but appears in the middle of the free interval. Other women complain of a constant pain which undergoes exacerbation during menstruation. In still another class, women are free from pain during the flow, only to have it recur when the flow has ceased. Sensibility of the uterine mucous membrane to the contact of the sound is also characteristic of endometritis. Sterility is a frequent consequence of this affection. The effect on the nervous system is shown by a train of well-known symptoms, not necessary to be here enumerated. *A priori* considerations, derived from the study of the pathological anatomy, would naturally raise doubt as to the efficacy of vaginal and intra-uterine irrigation, or cauterization, in effecting a restoration of the uterine mucous membrane to a healthy standard, and experience of competent observers has fully shown how little reliance can be placed on these methods. The indication of treatment is obviously to thoroughly remove the degenerated mucous membrane, so that the mucous membrane, forming anew, may remain normal under appropriate treatment. The curette enables us to satisfy this indication fully, especially when its use is followed by injections of iodine into the uterine cavity. Sims's curette is the form of instrument I have generally used, although, when the fungous growths were exceptionally soft, I have found that Thomas's wire curette accomplished the purpose satisfactorily.

4. In those small, benign neoplasms of the mucous membrane of the body of the uterus that are still confined in their growth to the uterine cavity—such as mucous and fibrinous polypi and adenoid growths. The application of Sims's curette, especially, can here effect the ablation of these small neoplasms with certainty. Dr. Emmet's curette-forceps can also be used advantageously in these cases.

5. In the secondary endometritis of areolar hyperplasia (chronic metritis), and in the endometritis complicating myoma uteri. The application of the curette in these circumstances is a limited one. The procedure is especially dangerous in the case of myoma, as, in consequence of an interference with its nutrition, the myoma may suffer necro-

sis and undergo putrefactive decomposition, if infectious matters have been introduced into the uterine cavity. Thomas's wire curette, however, in this latter form of endometritis, has afforded excellent results, in my hands, in a number of cases.

Lastly, the curette is applicable for diagnostic purposes; when abnormal secretions and hæmorrhages indicate a morbid condition of the uterine mucous membrane, the curette is the most certain and simplest means of making an exact diagnosis. Our second problem, as we saw above, relates to the best method of performing the operation. The principles that should guide us in its selection are those that obtain in every other surgical procedure, and may be summed up in the apothegms: a careful preliminary preparation of the patient, a strict observance of antiseptic precautions, carried out to the minutest details, and a judicious after-treatment. In the practical application of these principles, the patient should be instructed to use vaginal douches of an antiseptic solution for some time previous to the performance of the operation. The time selected should be preferably soon after menstruation. The patient must be placed upon a suitable table, and, if she is nervous and lacking in courage, an anæsthetic should be employed; whether she should lie on her back, or be put in Sims's lateral semi-prone position, will depend on the convenience of the operator.

The first is to be preferred when the uterine walls are thin and flabby, and it is necessary to control the movements of the curette through the abdominal walls. The anterior lip of the os uteri is seized with a tenaculum, and, unless already sufficiently open, the cervical canal should be dilated by the introduction of steel sounds (or Hegar's hard-rubber dilators) passed in succession until the proper degree of dilatation is effected. Before and after the application of the curette the uterine cavity should be thoroughly disinfected by an intra-uterine injection of an antiseptic solution; without the expenditure of much force, the curette scrapes the anterior wall, then the posterior, and afterward the lateral angles. By giving it the proper curve, it may easily be applied in each horn where the tubes pass off, and here especially we are apt, in chronic endometritis, to find fungous growths in excess. The diseased portions of the mucous membrane manifest themselves by their peculiar softness, as a rule. After this operation the patient should keep her bed for four or five days. As regards the question of danger in the application of this procedure, Hegar and Kaltentach* use this language: "In a very great number of cases we have never yet seen an injury from the use of the curette, and consider the procedure, applied in conformity with proper indications, as one of the most satisfactory in operative gynaecology." "This method of treatment," remarks Schroeder,† "is free from danger if undertaken with painstaking observance of antiseptic precautions. Among many thousand applications of the curette and injections in simple chronic endometritis, I have, indeed, seen exacerbations of existing perimetritic inflammations ensue, but scarcely ever fresh inflammatory phenomena. One case

* "Die operative Gynäkologie," 2te Aufl., S. 506.

† "Die Krankheiten der weiblichen Geschlechtsorgane," 6te Aufl., S. 124.

of death from infection, to be sure, before the antiseptic time." In these views I heartily concur, my experience leading to like conclusions.*

FRACTURE OF

THE FLOOR OF THE ACETABULUM.†

By CHARLES C. F. GAY, M. D.,

BUFFALO.

SURGEONS concede the difficulty, if not impossibility, of recognizing this fracture. There are no symptoms, except pain, indicative of this lesion; hence writers affirm that its presence can only be suspected. Furthermore, it is believed this fracture rarely exists, and that when it does occur it is caused by violent, rather than slight, blows over or upon the great trochanter.

Observation of cases of hip injury in hospital and private practice, examination of cabinet specimens, dissection, and limited experiments upon the cadaver, have led me to conclude that this lesion occurs much oftener than has hitherto been supposed, and that great violence is not an essential element in its causation.

Unable, as I am, to indicate any new sign of the presence of this fracture, and since nothing more than rest can be advised for patients with suspected acetabular fracture, it would seem a waste of time further to agitate the subject; but, having seen cabinet specimens of union of this bone, when, during life, fracture had not been recognized nor knowledge obtained of serious injury, I am impressed with the importance of calling attention to the subject, and suggesting the possibility that slight causes may produce the injury, that it is not so rare as we may have believed, and to warn against the danger arising from too frequent examination and unnecessary manipulation, in order to establish the nature of the lesion.

When fracture occurs at the floor of the acetabulum, the floor may be traversed by a single fissure, or the line of fracture may run in a semicircular direction, or it may be angular and the bone resolved into its three primitive pieces, which, according to authors, is a very rare fracture. Sir Astley Cooper reports a case, Sanson one, and Neill another, and these cases are referred to by Erichsen, Hamilton, Agnew, and others, because they are rare. Other cases have been reported of the same kind with recovery, or in which bony union has occurred without displacement.

Fracture of the floor of the acetabulum may occur alone or be associated with fracture of the innominate bone. It may take place with or without displacement of the head of the femur.

This subject requires me to consider briefly the *structure and construction* of the acetabulum. The anatomist informs us that the thinner parts of the bone, as at the floor and

center of the iliac fossa, are composed entirely of compact tissue.

The cavity may be divided into three component parts. At its deepest part the bone is so thin that it transmits light; it is so frail that it is strange it should so often escape fracture; but the upper and posterior portion is formed by the thickest and strongest part of the os innominatum, and is capable of bearing great weight and resisting immense force.

The acetabulum is partly articular, partly non-articular. The articular portion is of horse-shoe shape. It is altogether deficient at the cotyloid notch, which corresponds with the gap of the horse-shoe.

The non-articular part extends from the cotyloid notch as a rough recess in the floor of the acetabulum, and corresponds to the area inclosed by the horse-shoe.*

This is a wise provision in the construction of this cavity, since in this way the thin portion of bone is measurably protected from violence. Were the thin and delicate portion of the acetabulum in apposition with the head of the femur, it would not be possible, without fracture, to resist violence or withstand even the weight of the body. By this peculiar and wise anatomical arrangement the deeper portion of the cavity is protected against the inroads of friction, while at the same time it is an element of weakness as regards any provision against injury from undue force or pressure. It is easy to conceive how the impact of strong and violent force which would drive the head of the femur against the circular and projecting rim of the articular portion of the cavity may cause fracture of the thinner, without fracture of the thicker, portion of the bone.

The ease with which this bone can be fractured may be shown upon the cadaver. Place a piece of sole-leather over the trochanter to protect the soft parts, then strike in an oblique direction upward with a mallet, and you will fracture either the neck of the femur or the floor of the acetabulum. Fracture of the floor of the acetabulum may occur at any age, but it is most likely to occur in the young subject, and without the application of much force. Take the case of a man who falls—perhaps but a short distance; he strikes upon the trochanter; he lies helpless, or, it may be, is able to rise; he complains of pain, and thinks he may have fractured his hip; the pain is aggravated when any attempt is made to move; he is assisted to bed; is subjected to repeated examinations without disclosing any injury save slight contusion of the soft parts. There is no shortening or eversion of the limb, nor crepitus. The patient occupies his bed for two or three weeks, gets up and walks about the room with the aid of crutches, and in two or three weeks more is able to go about without support. The injury has apparently resulted in nothing except it be acetabular coxalgia. There is no deformity. What could have been the nature of an injury causing such persistent pain? Was it possible to ascertain its nature? Was the pain caused by contusion of the soft or hard parts? No. Had he intra- or extra-capsular or mixed fracture? No. It perhaps ought to be suspected that the lesion was a fracture of the floor of the acetabulum without displacement of the head of the femur.

* In order to avoid all misunderstanding, it may be well to state that I regard as contra-indicating the application of the curette any recent inflammatory process in the vicinity of the uterus, such as perimetritis, parametritis, oöphoritis, and salpingitis. Retroflexion of the uterus, especially if complicated by perimetric adhesions, would demand great caution in its use.

† Read before the New York State Medical Association, November 19, 1884.

* Morris.

This is a type of cases which fall under the observation of every surgeon, the *diagnosis* of which is very difficult to make out. The two following cases—one a case of Dr. Sands's,* the other my own case—illustrate the difficulty experienced in diagnosing this lesion.

Dr. Sands styles his case a "perforating fracture of the acetabulum."

The patient, aged sixty-six years, had fallen in a dumb-waiter well. When first seen, the patient was suffering severely. In forty-eight hours after the injury Dr. Sands noted the facts already observed by Dr. Levings, viz.: That the limb was not shortened nor everted; that the heel could be elevated; the limb was capable of free rotary motion; the trochanter described the arc of a circle, and there was *no crepitus*. Autopsy revealed the fact that the head of the thigh bone had penetrated the floor of the acetabulum, and that there was fracture of the pelvis.

My own case is reported by Dr. McBeth, house surgeon.

Ella Smith was brought into hospital April 26, 1880; single, American. Had been the mother of one or more children; contracting syphilis in September, 1879. Six hours previous to entering hospital she had fallen from a veranda to the pavement, a distance of thirteen feet, striking upon her right hip. Dr. Frederick and myself [Dr. McB.] gave her ether and made an examination, finding slight eversion of the toe, and crepitus. There was no shortening, each limb measuring thirty inches and a half. We did not consider a diagnosis of intra-capsular fracture positive, but, as relief was afforded by extension, we put on extension with eight-pound weight.

April 27th.—Patient seen by Dr. Gay, who made an examination and carefully measured the limbs, finding them same as night previous. Patient stated to-day that the eversion of toe was natural, having had it from childhood. There was *no crepitus*. Dressings by extension were therefore discontinued, thus allowing muscular action to shorten the limb if there was fracture.

May 5th.—This is as early as it was deemed advisable to make further examination, on account of dysmenorrhœa from which the patient suffered. She was etherized, and another examination made. The injured limb measured a trifle longer than the limb of the sound side; there was no more eversion and no crepitus. As the patient was somewhat relieved of pain by slight extension, Dr. Gay advised its continuance with use of eight-pound weight. For a time after this she was in a typhoid condition, and evidently suffering from septicæmia, having chills with fever, temperature reaching as high as 105° F. Tenderness over caput coli, and abdomen tympanitic. She sank gradually with little pain, and died May 19th. Rapid post-mortem changes. *Autopsy May 20th*; present Drs. Gay, Diehl, Peterson, and Frederick. In cutting down upon the hip, found large quantity of pus evidently from the abdominal cavity, as it could be forced through the opening in hip by pressure over abdomen. Vagina filled with pus. Found fracture of the acetabulum in three directions following the original line of union, involving fracture of innominate bone.

There is no sign in either of these reported cases that could possibly suggest the lesion revealed by dissection; therefore they confirm the correctness of statements made by writers. My house surgeon thought he detected crepitus when the patient was first examined, but crepitus was not found to exist at the examination made the next morning.

It is easier to presume he was mistaken than to believe that crepitus existed. If crepitus is ever observed, it must be in consequence of co-existent fracture of the innominate bone.

"There are no signs clearly distinctive of this fracture."* If fracture of this bone can only be suspected, then diagnosis of this lesion has for the first time to be made.

There is no shortening, no eversion, no crepitus, whether there be displacement of the head of the thigh bone or not; but there is pain in the hip which is aggravated by movement of the joint, by pressure upon the trochanter, and by attempts to turn the patient upon the side. I have said that pain is the only sign of this fracture; it exists with equal severity with that which accompanies fracture of the cervix femoris, but without the evidence of fracture the latter reveals. Therefore severe and persistent pain, in the absence of positive symptoms of fracture, is a sign of some significance of this lesion. Explorations through the rectum or vagina may assist in determining the nature of the injury.

Prognosis.—Fracture of the acetabulum without displacement of the head of the thigh bone does not constitute a fatal, nor even dangerous, injury, provided the lesion be early suspected and the patient let alone. Fracture with displacement is not necessarily fatal, as may be shown by the following remarkable case under the care of Charles Hewitt Moore,† of Middlesex Hospital. This is the case I supposed referred to by authors:

James Thomas Horsfield, who died at the age of sixty, was crushed about the pelvis, several years before, by a piece of timber. The left limb was shortened, and its principal motions were abduction and moderate flexion, while circumduction and extension were impossible. Dissection of pelvis: left innominate bone broken in the acetabulum into three pieces, corresponding to its original segments. These pieces were separated by the head of the femur having been driven through them into the cavity of the pelvis, where it rested upon the sacrum, below the promontory. The trochanter had worn a new socket upon the brim of the acetabulum. The right innominate bone was broken just in front of the acetabulum. Both ischio-pubal rami were broken. None of the fractures had united with ossific matter. Owing to this fact and to the fact that the pubes had been separated from all connection with the main body of the pelvis, the former (pubes) was displaced upward (possibly by muscular action) and backward, thus materially narrowing the pelvis antero-posteriorly. The pubes was also displaced laterally, i. e., somewhat twisted. As the person, in walking, bore most of his weight upon the right thigh, the corresponding ilium, which had now no support from the pubes, became bent toward the spinal column.

If recovery be possible under adverse conditions such as report of this case reveals, no one need hereafter despair of recovery in any case.

Treatment.—But little can be said upon the subject of the management of these cases. The surgeon wants less to know what to do than what not to do. Meddlesome surgery can not be advised. Rest of the joint is of the first importance. Whenever, therefore, a fracture is not made out, but is suspected, the patient should be let alone as much as possible, the limb left to rest in an easy position, with or without moderate extension, according as it is

* "Med. Record," vol. xii, 1877, p. 93.

* Agnew.

† "Med. Times," vol. ii, N. S., p. 384.

grateful or otherwise to the patient. In the case I have reported, it is quite probable the patient was deprived of her only chance of recovery by repeated examinations, two of which were entirely unnecessary, since they inflicted injury, without leading any nearer to a correct diagnosis.

Book Notices.

BOOKS AND PAMPHLETS RECEIVED.

Diseases of the Spinal Cord. By Byrom Bramwell, M.D., F. R. C. P. (Edin.), Lecturer on the Principles and Practice of Medicine, and on Medical Diagnosis, in the Extra-academical School of Medicine, Edinburgh, etc. With One Hundred and Eighty-three Illustrations. Second Edition. Edinburgh: Young J. Pentland, 1884. Pp. xvi-359.

Holden's Anatomy. A Manual of Dissection of the Human Body. By Luther Holden, late President of the Royal College of Surgeons of England, etc. Fifth Edition. Edited by John Langton, Surgeon to, and Lecturer on Anatomy at, St. Bartholomew's Hospital, etc. With over Two Hundred Illustrations. Philadelphia: P. Blakiston, Son & Co., 1885. Pp. xix-17 to 886, inclusive. [Price, cloth, \$5; sheep, \$6.]

A Handbook of Ophthalmic Science and Practice. By Henry E. Juler, F. R. C. S., Junior Ophthalmic Surgeon to St. Mary's Hospital, etc. With One Hundred and Twenty-five Illustrations. Philadelphia: Henry C. Lea's Son & Co., 1884. Pp. 467.

The Principles and Practice of Gynecology. By Thomas Addis Emmet, M.D., LL.D., Surgeon to the Woman's Hospital of the State of New York, etc. Third Edition, thoroughly revised. With One Hundred and Fifty Illustrations. Philadelphia: Henry C. Lea's Son & Co., 1884. Pp. xxiv-17 to 876, inclusive.

Jequirity: its Uses in Diseases of the Skin. By John V. Shoemaker, M.D., Lecturer on Dermatology at Jefferson Medical College, etc. [Reprint from the "Transactions of the Medical Society of the State of Pennsylvania."]

The Relation of Micro-organisms to Surgical Lesions. By Henry O. Marey, M.D., Boston. [Reprint from the "Journal of the American Medical Association."]

Mimicismo ó Neurósis Imitante (Miryachit, Jumping, Latah). Estudio Crítico por José Armangué y Tuset, Ayudante de Cátedras Prácticas de la Facultad de Medicina de Barcelona. Barcelona: Los Sucesores de Ramirez y Ca., 1884. Pp. 48.

Pyuria; or, Pus in the Urine, and its Treatment. Comprising the Diagnosis and Treatment of Acute and Chronic Urethritis, Prostatitis, Cystitis, and Pyelitis, with especial reference to their Local Treatment. By Dr. Robert Uitzmann, Professor of Genito-urinary Diseases in the Vienna Poliklinik. Translated, by permission, by Dr. Walter B. Platt, F. R. C. S. (Eng.), Demonstrator of Surgery in the University of Maryland, etc. New York: D. Appleton & Co., 1884. Pp. 98.

The Plaster-of-Paris Dressing in the Treatment of Fractures. By W. O'Daniel, Bullards, Ga. [Reprint from the "Transactions of the Medical Association of Georgia."]

The Fillmore Will Case. By Landon Carter Gray, M.D., etc. [Reprint from the "American Journal of Neurology and Psychiatry."]

State Board of Health of New York. Report on Fresh and Condensed Milk. By C. E. Munsell, Ph.D. [Extract from the "Fourth Annual Report."]

Prostatic Hypertrophy and Urinary Obstructions—its [sic] Treatment without Catheterism. By A. B. Palmer, M.D., LL.D., Ann Arbor, Mich.

Sewage Disposal and Contamination of Water Supply. By Alfred Ludlow Carroll, M.D., etc. [Reprint from the "Medical Annals."]

Correspondence.

LETTER FROM WASHINGTON.

The National Conference of State Boards of Health and its Bill for the Establishment of a New National Board of Health.—The Bill for a New Museum and Library Building.

WASHINGTON, December 15, 1884.

The principal event of the week has been the meeting of the representatives of State boards of health, which convened, pursuant to adjournment, in this city. The conference drew up a bill which, if it becomes a law, will reorganize the National Board of Health, or rather establish a new one. This board will consist of persons appointed from actual State boards of health, and no person not at the time a member of a State board of health is to be eligible for appointment. No compensation is to be charged for the services rendered, but actual necessary expenses will be allowed. The duties of the board are to be, to investigate the causes of diseases and epidemics at home and abroad, to make regulations for quarantines, and to aid State boards of health. The former laws relative to vessels from infected ports are to be re-enacted, and the several rules and regulations, when duly approved by the President, are to be executed by the existing departments of the Government. The board is to have a chairman and a secretary, and is to meet annually; it may, however, be called together in a sudden emergency by the President of the United States, or by its own officers. The Department of State is hereafter to prepare the abstracts of the information received from consuls and medical officers abroad, and transmit the same to persons officially interested. Five hundred thousand dollars are to be appropriated for the purposes of the act.

It is thought, by those interested in the measure, that the practical working of the new bill, which may possibly pass at this session of Congress, will remove the sources of irritation which were found under the operation of the old law. The new board will have the special advantage of representing something, will constitute a powerful organization, and, as it will be legislative and advisory in its functions, will meet with no opposition from the departments of the Government whose duty it will be to carry its decrees into effect. The work of sanitary investigation will certainly suffer no diminution in vigor by being placed in the hands of practical men. The result, while perhaps mortifying to the present board, will harmonize other conflicting interests, and can meet only with success. The only drawback to the passage of the bill at this session is the fact that the latter is short, its real business requiring to be accomplished in less than two months.

The bill for the erection of a new museum and library building is expected to come up this week, and, as there is no opposition, its friends look confidently for its passage.

On the last day of the session of the Committee on Federal Legislation of the Health Conference, its members were entertained by the Health Officer of the district with an "oyster roast" at one of the wharves. Several influential members of Congress assisted in hiding the bivalves from mortal view, and hilarious speeches were made. As a legislative persuader the oyster has an established national reputation; it might be said, *Per ostrea est iter ad appropriationes*. However that may be, the entertainment was as successful as it was unique, and everybody concerned was happy.

THE
NEW YORK MEDICAL JOURNAL,
A Weekly Review of Medicine.

Published by
D. APPLETON & Co.

Edited by
FRANK P. FOSTER, M. D.

NEW YORK, SATURDAY, DECEMBER 20, 1884.

MEDICAL REFORM.

WE have received copies of two excellent addresses, one of which, on the "Legal Control of Medical Practice by a State Examination," was read by Dr. John B. Roberts before the Medical Jurisprudence Society of Philadelphia. The other, entitled "A Discussion of Some of the Questions of Medical Education and Medical Ethics," was presented to the Philadelphia County Medical Society by Dr. Henry Leffmann. The topics touched upon in these papers are so important that we can not forbear commenting on some of them.

Dr. Roberts handles his subject ably, and the plan which he suggests would, if adopted, doubtless work a radical change in the character of the medical profession. He advocates the establishment of a State board of medical examiners, "which shall examine all persons desiring to enter upon practice in this State [Pennsylvania] after January 1, 1886, without regard to when, where, or how they obtained their medical education." He does not aim at abolishing either the courses of instruction or the privileges of the schools, but suggests that a State examination, and not the simple presentation of a diploma, should be the prerequisite to registration. He maintains that, under the system he outlines, not only will the examinations be strictly impartial, but able men who may have been unjustly rejected by the schools, and incapable students who have been let through, will have their qualifications more carefully tested. We fancy there will be little dissent from the general truth of the view taken by Dr. Roberts, but the satisfactory arrangement of the details does not seem easy of accomplishment. In February a committee is to report upon the subject to the Medical Society of the State of New York, and it may turn out that that committee has been able to solve the knotty problems connected with it. At all events, we hope that the matter will be discussed thoroughly when the committee has made its report, and we therefore refrain from its further consideration at present.

Dr. Leffmann's essay is elaborate and forcible, but with one of his suggestions, which he terms a "radical improvement," we are inclined to think that he will find he is running counter to the fixed sentiment of the profession—a sentiment that we take to be decidedly well founded. His proposition is to encourage the student to work in a special direction after a single year of general medical study. The establishment of separate degrees in the individual branches of medicine is novel, but the idea does not seem to us commendable. Were this system to be adopted, the country would soon be overrun with uneducated specialists, and there are too many of them already. A separate degree in medical jurisprudence, as suggested by Dr.

Brouardel, is not so objectionable; in fact, there are good reasons why special instruction should be given in this department, but let such a course supplement a thorough general training, and not take its place.

Another matter in which we can not agree with Dr. Leffmann is his proposal to throw out of consideration entirely the time spent by the student in private study with a practitioner. This, we fear, would work great injustice, at least in the present condition of our country, to many poor and worthy young men whose circumstances prevent them from spending three full years in a medical school; certainly, if it had been enforced years ago it would have excluded many of the present leaders of the profession. We are not yet prepared to regard the preceptor's certificate as of no value, but we do think that the student whose first year has been spent in office study should be required to pass the same examination as the class which he proposes to enter—a rule that is adhered to rigidly by academic institutions.

MINOR PARAGRAPHS.

A DELICATE SUBJECT FOR A NOVELIST.

THE "Gazette hebdomadaire de médecine et de chirurgie" reviews at length a new novel with the suggestive title of "*Le faiseur d'hommes*." The romance is nothing more nor less than a plea in favor of artificial impregnation; the *dramatis personæ* are a childless count and countess and a highly scientific physician. A certain abbé is also introduced, in order to fill out the religious side of the picture. Not to enter into the details of the subject, which are better suited for a treatise on gynecology than for a popular novel, it suffices to say that the experiment is successful, the result being a son, who is afterward known at Court as the "child of the syringe." But the most curious reading is the long and abstruse argument against artificial impregnation which the reviewer introduces into his article. We can liken it to nothing but the discourse on the seven deadly sins ascribed by Chaucer to his parson in the "Canterbury Tales." In fact, the writer's view of the subject from a medical standpoint is scarcely less fanciful than the novelist's.

SANITARY WORK IN BROOKLYN.

THE Brooklyn Health Commissioner, Dr. J. H. Raymond, having been asked to submit to the recent conference of representatives of State and municipal boards of health an account of what was being done by the sanitary authorities of that city to place it in a proper condition to meet the probable advent of cholera next summer, has presented a very forcible statement, in which he discusses both the matter of quarantine and the local conditions that need to be looked to. It appears that a great deal has been accomplished already toward putting the city in an improved sanitary state, and that, from Dr. Raymond's showing, the machinery is very well arranged for carrying on the work to the necessary extent.

THE CHOLERA CONTROVERSY IN GERMANY.

FINKLER and Prior have addressed a communication to the "*Kölnische Zeitung*," resenting the imputations which Koch has made on their skill in bacteriology. The excuse they give for stating their grievances in a newspaper is that they wish their views to be more widely known than they could be from their publication in a medical journal. The "*Deutsche Medi-*

zinal-Zeitung" comments upon the bad taste displayed by them in the matter, and suggests that, if they wish to "save their professional honor," as they allege, it would be more dignified to address themselves to the profession than to the general public.

PROFESSOR SCHWENINGER.

It appears that this individual, who was arbitrarily placed by Bismarck in the chair of dermatology at the University of Berlin, persists in holding the position in spite of the opposition, amounting to ostracism, shown by his indignant colleagues. We learn that his clinic has not been honored by the presence of a single student. Although the Government has been able to force an unworthy candidate upon the institution, it is powerless to inspire respect for a man who is small enough to be the agent of despotism.

NEWS ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending December 16, 1884:

DISEASES.	Week ending Dec. 9.		Week ending Dec. 16.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid Fever.....	19	14	32	7
Scarlet Fever.....	60	13	101	21
Cerebro-spinal meningitis...	3	3	5	3
Measles.....	126	20	147	19
Diphtheria.....	73	40	76	32

The New York Orthopædic Hospital and Dispensary.—This excellent institution derived substantial aid, we are happy to learn, from the proceeds of an entertainment given in its behalf at Delmonico's last Saturday afternoon.

The Manhattan Eye and Ear Hospital.—We are glad to learn, from the Fifteenth Annual Report, that this institution is now entirely out of debt. It is supported by voluntary contributions, and is intended for the free treatment of persons who are too poor to pay for medical advice.

Local Health Officers in the State of New York are hereafter to be appointed only after a competitive examination, in accordance with the new civil-service rules. The examination papers are to be prepared by an examining board of five physicians, to be designated by the Civil-Service Commission, and the examinations are to be held in the presence of a county judge, who will transmit the papers to the Commission.

The Buffalo Obstetrical Society.—At the next meeting, to be held Tuesday evening, the 23d inst., Dr. Thomas Lothrop is to read a paper introducing a discussion on "Rest during the Menstrual and Puerperal Periods."

The Paris Academy of Medicine, we learn from the "Gazette hebdomadaire de médecine et de chirurgie," has elected M. Charpentier, the obstetrician, to membership in place of the late Dr. Fauvel.

The Ninth International Medical Congress.—At the outset of its work, the General Committee of Organization has met with a serious loss in the death of one of its members, Dr. James G. Thomas, of Savannah. In a circular announcing the fact, the Executive Committee state that Dr. Thomas, at considerable sacrifice, went to Washington on the 29th of November, to attend the meeting for organization, and that on the way he was seized with pneumonia, which was the cause of his death.

The Death of Professor J. B. Fonssagrives is announced in the French journals. He was a well-known writer on various subjects connected with medicine, especially hygiene. He died of cholera.

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from December 7, 1884, to December 13, 1884:*

HAMMOND, JOHN F., Colonel and Surgeon. Retired from active service, by operation of law, on December 7, 1884, under provisions of act of Congress approved June 30, 1882. S. O. 287, A. G. O., December 8, 1884.

McKEE, J. C., Major and Surgeon. Leave of absence still further extended one month. S. O. 288, A. G. O., December 9, 1884.

PORTER, JOSEPH Y., Captain and Assistant Surgeon. Sick leave of absence extended four months on surgeon's certificate of disability. S. O. 286, A. G. O., December 6, 1884.

KANE, JOHN J., Captain and Assistant Surgeon. From Department of the East to Willet's Point, New York. S. O. 286, A. G. O., December 6, 1884.

BANISTER, J. M., Captain and Assistant Surgeon (Fort Adams, Rhode Island). Granted one month's leave of absence on surgeon's certificate of disability. S. O. 251, Department of the East, December 9, 1884.

GRAY, CHARLES C., Major (retired). Died at Geneva, N. Y., November 22, 1884, instead of November 26, 1884, as heretofore announced. Circular Orders, A. G. O., December 8, 1884.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending December 13, 1884:*

CRAIG, T. C., Passed Assistant Surgeon. Detached from the Alliance and placed on waiting orders. December 6, 1884.

CURTIS, L. W., Assistant Surgeon. Ordered to the Naval Hospital, Chelsea. December 9, 1884.

GAINES, J. H., Passed Assistant Surgeon. Present duty continued.

GREEN, E. H., Passed Assistant Surgeon. Ordered to special duty at Museum of Hygiene, Washington. December 11, 1884.

MURRAY, J. M., Passed Assistant Surgeon. Detached from Naval Hospital, Chelsea, and ordered to the Flagship Hartford. December 9, 1884.

WOOLVERTON, T., Surgeon. Ordered to the Shenandoah. December 6, 1884.

Society Meetings for the Coming Week:

MONDAY, December 22d: Medical Society of the County of New York; Boston Society for Medical Improvement; Cambridge, Mass., Society for Medical Improvement; Lawrence, Mass., Medical Club (private).

TUESDAY, December 23d: New York Dermatological Society (private); New York Surgical Society; Buffalo Obstetrical Society; Medical Society of the County of Lewis, N. Y.

WEDNESDAY, December 24th: New York Pathological Society; American Microscopical Society of the City of New York.

THURSDAY, December 25th: Harlem Medical Association of the City of New York; Roxbury, Mass., Society for Medical Improvement (private).

FRIDAY, December 26th: New York Clinical Society (private); Yorkville Medical Association, New York (private); New York Society of German Physicians (private).

SATURDAY, December 27th: New York Medical and Surgical Society (private).

The Charges against the President of the Academy of Medicine.—Charges having been preferred against the President of the Academy of Medicine, Dr. Fordyce Barker, by Dr. E. S. F. Arnold, Dr. Nathan Bozeman, Dr. Austin Flint, Jr., Dr. S. S. Purple, Dr. C. S. Wood, and Dr. William Young, turning upon the allegation that he was not a graduate of the Paris School of Medicine, as he had sworn to being, the testimony for and against the charges was investigated by the Committee on Ethics, consisting of Dr. Andrew H. Smith (chairman), Dr. Virgil P. Gibney, Dr. Charles A. Leale, Dr. Henry E. Cramp-ton, and Dr. C. Dixon Varley, and at the last regular meeting of the Academy, held on Thursday evening, December 18th, the committee unanimously reported (giving the evidence in full) that the charges were not sustained. On motion, the report of the committee was unanimously accepted and adopted by the Academy. On resuming the chair, which he had vacated during the reading of the report, Dr. Barker said: "Here endeth the second lesson." The Academy will now resume its scientific work, which it has continued zealously, efficiently, and harmoniously for thirteen months, until the present interruption by this supreme effort to elevate the character of the medical profession." Various motions were then made, looking to the censure of the gentlemen who had brought the charges, but, when it had been moved by Dr. John C. Dalton, supported by the President, that they be laid on the table, they were all withdrawn.

Changes in the German Faculties.—The "Progrès médical" learns that Dr. A. Gad, of Würzburg, has been appointed director of the Berlin Institute of Experimental Physiology, in place of Dr. Kronecker, who has been called to Berne.

The Death of Dr. Frederic Elliot, of New York, is announced to have taken place at Nyack on Wednesday, the 17th inst., at the age of fifty-six. Dr. Elliot was of English birth, but came to this country at an early age, and took his medical degree at the College of Physicians and Surgeons in 1851. He was a member of the Medical Society of the County of New York, of the Pathological Society, of the Physicians' Mutual Aid Association, and of the Medico-Historical Society. He was highly esteemed as a man and as a practitioner.

The New York Medico-Legal Society elected the following-named gentlemen to office at the annual meeting held on Wednesday evening of this week: Dr. R. Ogden Doremus, President; Clark Bell, and D. C. Calvin, Vice-Presidents; Leicester Holme, Secretary; J. S. McIntire, Assistant Secretary; M. Ellinger, Corresponding Secretary; Dr. J. A. Irwin, Treasurer; Dr. A. H. Smith, Curator; Dr. C. A. Doremus, Chemist; Dr. M. J. B. Messemer, Librarian; Dr. R. B. Kimball and Dr. E. Bradley, Trustees; and David Dudley Field and Dr. Stephen Smith, members of the Permanent Commission.

Letters to the Editor.

THE DISCOVERY OF THE ANÆSTHETIC PROPERTY OF COCAINE.

133 EAST THIRTY-EIGHTH STREET, NEW YORK, December 5, 1884.

To the Editor of the New York Medical Journal:

SIR: In the various articles on cocaine that have appeared in the many journals since its introduction as an anæsthetic, errors have been observed which I wish by this letter to correct. My authority for these corrections is contained in a letter received

the past week from Dr. Carl Koller, of Vienna, the discoverer. 1. It has been repeatedly stated that he was a medical student, whereas he is a graduate and assistant physician to the Vienna General Hospital. 2. It has been stated that cocaine had been used in Vienna by the laryngologists first, and that from them Dr. Koller conceived the idea of using it on the conjunctiva, whereas the converse is true. It is but just that due credit should be given to Dr. Koller for this wonderful discovery, which he arrived at by reasoning, and not by accident.

Very truly,

WILLIAM OLIVER MOORE.

Proceedings of Societies.

OBSTETRICAL SOCIETY OF PHILADELPHIA.

Meeting of December 4, 1884.

The President, Dr. R. A. CLEEMANN, in the chair.

Ovarian Tumor.—Dr. DRYSDALE presented a polycystic ovarian tumor which he had removed that morning. He had first seen the patient with Dr. C. R. Prall, May 5, 1884. She was married, fifty years of age, pale, thin, and delicate-looking. She had had eight children, the youngest of which was then sixteen years old. With some trifling exceptions, her menstruation had been perfectly natural until two months before; since then she had had a constant and sometimes profuse discharge of blood from the vagina, which still continued. She first discovered the tumor in March, 1884. On examination, Dr. Drysdale found a semi-solid, smooth-walled, globular tumor occupying the lower part of the abdomen and reaching nearly to the umbilicus. It was freely movable, did not fluctuate, but was elastic and a little tender on pressure. Vaginal examination revealed a lacerated cervix. The sound entered the uterus two inches and a half, taking a direction to the right of the tumor. On deep pressure, the end of the sound could be felt at the lower part of the right border of the mass. While the sound was in the uterus the tumor could be moved freely without affecting it. He diagnosed a multilocular ovarian tumor. By the 5th of June, one month later, it reached nearly to the ensiform cartilage. From this time it increased rapidly in size, and, when it was removed, filled the abdomen, pressing the lower ribs outward. It proved to be a multilocular tumor of the left ovary. His object in bringing it before the society was to obtain an opinion from the members as to the cause of a phenomenon which was observed in the early stage of the growth. When the patient first noticed the enlargement she found that, when she lay on her right side, the tumor, as if lighter than the surrounding parts, ascended to the left, and, when she lay on her left side, to the right. She informed Dr. Prall of this, and he naturally supposed she was mistaken; but a careful examination of the tumor while she changed her position verified her assertion. As the mass increased in size, this peculiar change of position ceased, and, when the abdomen was opened, nothing could be found to account for the singular behavior of the growth.

Hydrochlorate of Cocaine.—Dr. C. M. WILSON presented the histories of three cases in which the hydrochlorate of cocaine had been used with the hope of obtaining local analgesia, and reported negative results.

Malignant Cystic Disease of the Ovaries.—Dr. D. LONGAKER exhibited specimens with the following history: The subject was a German woman, sixty-three years old. She had been

married the last twenty-seven years of her life, and was sterile. During the last fifty months she had been under the care of Dr. Joseph S. Gibb, at whose request he first saw her and by whose kindness he was enabled to report the case. The menopause was established at fifty-three, ten years ago. The patient had always enjoyed fair health, but four years ago she again began to have a bloody discharge from the vagina. For this she consulted a doctor and was soon well again. The date of the onset of her last illness was indefinite. It was insidious, and the particular symptom for which she desired relief was inability to pass urine. This was found to be due to suppression, as the bladder was empty. There was also decided interference with nutrition. Her appetite and strength failed rapidly. The urine was found to contain a very small amount of albumin. She had occasional nausea, bilious vomiting, and diarrhoea. She suffered from pain in the left side of the abdomen. On examination, a hard, nodulated tumor was discovered, to the left of the uterus, projecting upward into the left inguinal region; it was adherent and but slightly movable. She was first seen by the speaker on October 6th. At that time she was in bed, suffered from orthopnea, and was unable to rest or lie down. Her abdominal cavity was greatly distended by a fluid which had accumulated rapidly in the previous three or four weeks. (Edema of the ankles had been noticed a few days before. Her general appearance was decidedly anemic and cachectic. The abdomen was very tender on palpation, especially over the left inguinal and hypogastric regions. The flanks were bulging and were flat on percussion. The tumor, which could be indistinctly outlined, was immobile, lying in contact with the left ilium, dipping down into the true pelvis, behind and to the left of the uterus and distinct from it. The cervix had undergone senile absorption, but from the os externum a small polyp was found hanging into the vagina. October 7th she was tapped, and a large bucketful of a brownish-red fluid, of the specific gravity of 1.020, was removed. On microscopic examination, it was found to contain blood and various corpuscles and epithelium. (The ovarian cell was not found). It contained paralbumin.

A more careful examination now revealed a circumscribed, clearly defined, firm, nodulated growth in the region already indicated. It was found adherent, and could be only slightly displaced. It was of the size of a large fist. Palliative treatment was continued, but the patient's condition gradually grew worse. There was again a slight accumulation of fluid in the abdominal cavity, she was subject to attacks of bilious vomiting, and diarrhoea alternated with constipation. There was no apparent increase in the size of the tumor, and during this period pain was not a marked symptom. At no time was there acute suffering. She died of exhaustion November 27th. At the autopsy, on the next day, by Dr. Gibb, in the presence of and assisted by Dr. E. W. Holmes and the speaker, the subcutaneous fat was found to have been almost entirely absorbed. The parietal peritoneum was covered with lymph, with numerous nodular elevations in various stages of organization. The intestines had contracted numerous adhesions. The capsule of the liver was one eighth of an inch thick. In the mesentery there were also deposits of lymph, some of which were more recent and less organized. The abdominal cavity contained about two quarts of fluid, the same as that already described. On the left side, extending two inches above the pelvic brim, was found a tumor, apparently solid, but which, on close examination, was found to be cystic. One of the largest of the cysts had ruptured; the opening was found at the posterior-inferior portion of the growth. It was not recent. The capacity of the emptied cyst was about four ounces. The tumor dipped down into the true pelvis, between the broad and utero-sacral ligaments of the left side. It was very adherent, and was removed with great diffi-

culty. On incising and freely opening the cyst, some coagulated fibrin was found, the remains of a hæmorrhage into the cavity. When it was entirely removed it was found to arise from the left ovary. The oviduct was slightly dilated, and its fimbriated extremity was adherent to and spread out over the tumor. On the right side, in the broad ligament, there was a cyst slightly larger than the tumor, its contents being dark and very dense. It was very heavy. The cyst was surrounded by a dilated Fallopian tube containing a clear, transparent fluid of a bluish-white hue. At its widest part it was an inch in diameter. Behind and below this cyst was found the right ovary, adherent, flattened out, and apparently continuous with it. The entire specimen was carefully dissected out as it was now shown. From its rapidly fatal tendency, with the macroscopic appearance of the tumor, there was very little doubt that a microscopic examination would show it to be malignant. Though perhaps possessing the greater pathological interest, there were also a few points in the case bearing upon diagnosis and treatment. Study of the fluid at first caused a suspicion that it came from a cyst; its high specific gravity and the chemical tests to which it answered favored such a view. But this was entirely at variance with the history of rapid accumulation and absence of the physical signs indicating the existence of a large cyst. It was apparent at the autopsy that an attempt at extirpation could only have hastened the fatal result. The specimen was referred to a committee for further investigation.

CHICAGO MEDICAL SOCIETY.

Meeting of December 1, 1884.

The President, Dr. D. A. K. STEELE, in the chair; Dr. LISTON H. MONTGOMERY, Secretary.

The late Dr. Abram Groesbeck.—Resolutions relative to the death of Dr. Groesbeck, an old and well-known physician, and an ex-president of the society, were introduced by Dr. R. C. HAMILL, and, after remarks by Dr. JOHN BARTLETT, eulogistic of the deceased, were adopted.

An Extensive Injury of the Face.—Dr. ROBERT TILLEY related the history of the case, and showed the patient, a boy about five years old, who had been injured by an elevator on the 23d of August. He was lying down on a floor, looking down into an elevator shaft, when the platform descended and struck him on the back of the head, just beneath the occipital protuberance, forcing the bridge of the nose against the edge of the opening in the floor. The resistance of the parts at the back of the neck and head being relatively great, very little injury followed in that situation, but the greater part of the force of the blow was sustained by the face, upon which the edge of the floor had evidently impinged, just at the junction of the frontal, nasal, and superior maxillary bones, producing a star-shaped laceration of the soft parts running up the forehead about an inch from the root of the nose, downward along the bridge of the nose for about the same distance, then upward along the right side of the frontal bone to a point corresponding to the outer end of the eyebrow. These wounds extended through the soft parts to the bone, and two others radiated downward and outward from the root of the nose. The nasal bones were crushed and in part destroyed, the soft parts were torn from the bones, and the cartilaginous septum of the nose was wrenched from the bony septum. The nose and adjacent parts hung down over the mouth and the lower lip, and it appeared as if the right eye was destroyed.

Absorbent cotton soaked in dilute acetic acid was packed in between the soft parts and the superior maxilla, on each side, to stop the bleeding, and the assistance of Dr. Charles Adams,

Dr. A. B. Hosmer, and subsequently Dr. C. T. Parkes, was procured. It was decided not to try to force the two maxillary bones closer together, but to leave the parts to heal by granulation, especially as it was thought that it would be difficult to anesthetize the patient. It was questioned, too, whether the advantage gained would equal the additional discomfort from any device that could be adopted. The boy was in a semi-unconscious state, but there did not seem to be any special indication of brain lesion. The soft parts were brought into good apposition with stitches, and both eyes were occluded with a pressure bandage. There was a good deal of œdema about the right eye. Slight fever followed at once and increased considerably on the fourth day, but yielded readily to the use of warm baths and a little calomel. Up to the time of the removal of the pressure due to the bandage there was persistent somnolence, but, when the bandage was taken off, the boy said, as if in answer to a question, "The elevator struck me." At intervals after this he told the circumstances of the accident, and called to mind various objects that he had seen in Dr. Tilley's office at the time the wounds were dressed. It was thought best not to reapply the pressure, and consequently the œdema increased, but union had taken place, except at the root of the nose, and all but two or three of the stitches were removed. Great swelling persisted, however, and subsequent interstitial suppuration made it necessary to reopen the superficial wound on the right side of the face and the superficial part of the deep wound on the left side. These two wounds were very obstinate in healing, and interstitial suppuration in the contused parts about the right eye had to be relieved by incision, which resulted in a scar at the malar prominence and the subsequent production of ectropion. The tendo oculi seemed to have been torn away from its attachment, causing the orbicularis palpebrarum to act at a corresponding disadvantage.

For nearly three months there was almost absolute anesthesia of the parts of the face implicated. There was marked diplopia, but it was evidently due to paresis of the muscles of the right eye, and the speaker thought there was no disturbance of the relative position of the two eyeballs. The paresis was now much relieved, and the anesthesia had almost disappeared, but the canaliculi were quite distorted, and it would probably be necessary to lay them open. The gap between the superior maxillary bones was completely closed, and the nasal passages had been almost occluded by adhesion of the inferior turbinated bones to the floor of the inferior meatus; but a passage had been forced through on each side with the galvanic cautery, and the boy's breathing and enunciation were now practically normal. It was proposed to remedy the ectropion and the general displacement of the right eyelids by loosening the cicatrix over the malar prominence as much as possible, and perhaps by making a counter-cicatrix on the inner side of the lid with the galvanic cautery; also to try to make a substitute for the disorganized tendo oculi by causing the integument to adhere to the bony structures opposite the inner canthus.

Dr. C. T. PARKES, who had seen the boy soon after the accident, thought that the result had been much better than could have been expected, in view of the terrible nature of the injury. Doubtless the measures which Dr. Tilley proposed would overcome the ectropion, which was the most prominent deformity that now remained.

Extra-uterine Pregnancy.—Dr. W. W. JAGGARD read a paper on this subject, in which he dwelt more particularly on the palliative measures to be adopted in cases of accidental rupture of the sac.

Dr. PARKES said that, according to his experience and his acquaintance with the literature of the subject, hæmorrhage was the chief cause of death in these cases, and he thought that

delay in the performance of laparotomy—the only means by which the hæmorrhage could be controlled—was expecting too much of nature.

Dr. J. H. ETHERIDGE alluded to a case of seven or eight years' duration, in which, the fœtus having become encysted, a trocar was finally introduced and the decomposed remains of the fœtus were discharged entirely.

Ovariectomy.—The PRESIDENT read the histories of three cases and showed the specimens. In one of the cases the patient did well for forty-eight hours after the operation, but symptoms of pyæmia then appeared, and she died on the fifth day. At the autopsy a small sponge, with a string attached to it, was found in Douglas's *cul-de-sac*, firmly imbedded in lymph. No hæmorrhage had occurred, but general peritonitis had set in, and the cause of death was quite apparent. But for the presence of the foreign body, the patient would doubtless have recovered, and it seemed almost impossible that it should have been overlooked when the final count was made. In the second case the operation was performed within a short time after an attack of peritonitis, and the patient did well. The third case was one of papillary cystoma; the patient recovered. The President wished to emphasize the following points: (a) Always count the sponges used in an operation; (b) observe absolute cleanliness; (c) peritonitis is not a contra-indication of either tapping or ovariectomy; (d) cystic fluid left in the peritoneal cavity is dangerous and likely to cause pyæmia, but blood is probably innocuous; (e) a rubber blanket fastened to the patient, with a central fenestra through which to operate, is useless, small tin basins for the waste being preferable, as they can readily be changed; (f) each case calls for special judgment and attention to every detail.

Laparotomy for Abdominal Tumors.—Dr. PARKES reported three cases—two of ovariectomy (successful), and one for uterine fibroma (with a fatal termination). There was nothing remarkable about the ovariectomies, but one of the cases was interesting from the fact that the patient came near losing her life by intestinal obstruction at the end of the third week. Such an occurrence was noteworthy, as serving to show that we should be on our guard against reporting "cures" prematurely. In the case of fibroma, supra-vaginal amputation of the uterus was performed. A solid rubber cord, a quarter of an inch thick, was thrown around the pedicle at the narrowest part, and drawn as tight as the operator's strength would allow; as a temporary ligature. The mass was then cut away about half an inch above the ligature, and hæmorrhage was seen to be wholly prevented, but, just as he had turned aside to place the severed mass on an adjoining table, and was about to take up the pedicle for further treatment, the rubber cord rolled over the free end of the stump, and the latter fell into the pelvis, out of sight, while the blood seemed to flow in torrents from its cut surface. Finally the stump was grasped between the thumb and fingers and drawn out of the pelvis again, and the bleeding ceased. The pedicle was then transfixed and tied in two halves. The trouble would not have occurred if a temporary clamp had been used. The pedicle was dropped, and in closing the external wound great difficulty was met with in returning the intestines within the abdominal cavity, and keeping them there while the sutures were tied. After rallying from the anesthesia, the patient vomited a great deal for a number of hours, and, after having ceased, the vomiting returned and lasted up to the time of her death, which took place forty hours after the operation. Only a very superficial autopsy was allowed; but this sufficed to show the cause of death to have been a gangrenous condition of about six inches of the ileum. The cause of this it was difficult to explain, for no twist had been found, and no noticeable injury was done to the gut at any time.

Both the President's cases and those related by Dr. Parkes being before the meeting, Dr. PARKES stated that he was present at the operation in which the sponge had been left in the abdomen, and that he remembered the precautions that had been taken to guard against such an accident. He admired the President's frankness in placing the case on record.

Dr. ETHERIDGE remarked, in regard to Drysdale's corpuscle, which had been mentioned in one of the cases, that it had been found in renal cysts.

Dr. R. G. BOGUE thought that it would have been strange if the patient had recovered in Dr. Parkes's case of supra-vaginal amputation of the uterus, so many and so great were the difficulties met with in the operation.

Dr. ENGER asked if the bowels were at any time twisted, or if their refrigeration by long exposure had had anything to do with the gangrene.

Dr. TILLEY said that the accident of leaving a foreign body in the abdomen happened oftener in this country than in Europe, because we had different assistants at different operations, whereas European operators always had the same assistants. The sponges should certainly be counted, or pieces of tape be attached to them. Regarding the confinement of the bowels for eleven days after ovariectomy, he did not think it judicious.

Dr. J. J. M. ANGEAR remarked upon the lessons that were to be learned from cases in which mistakes were made, and on the President's conscientiousness in reporting the case of death from a sponge having been left in the abdomen.

Dr. LISTON H. MONTGOMERY and Dr. PARKES dissented from the statement that foreign bodies were oftener left in the abdomen in this country than elsewhere.

CLINICAL SOCIETY OF THE

NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL.

Meeting of December 6, 1884.

Dr. THOMAS E. SATTERTHWAITE in the chair.

[From notes furnished by the Executive Committee.]

Discussion on Erysipelas.—Dr. EDWARD L. PARTIDGE opened the appointed discussion. Erysipelas, he said, like the exanthemata, was infectious and epidemic; it had a period of incubation, prodromes, and a definite course, but, on the other hand, it was less contagious than any of the exanthemata, and recurred with greater frequency, in these points resembling diphtheria and septicæmia. It was not interchangeable with the exanthemata or with diphtheria, but might possibly be with septicæmia and puerperal fever, and perhaps with typhus. In 1838 erysipelas and typhus existed together in an English hospital, and apparently were related in that instance. The relation with puerperal fever might perhaps be shown by the not uncommon case of the puerperal woman who died of septicæmia soon after childbirth, while the child died of a distinctly phlegmonous erysipelas. It was probably never of neurotic origin, nor was it necessarily preceded by traumatism, there being undoubtedly an idiopathic form in which the poison gained access in all probability through the respiratory tract. Of this latter view, however, we had no absolute proof, and the view which insisted upon the necessity of an abrasion was therefore entitled to respect. The disease was probably spread through the lymphatics, and it had been shown by Billroth that it was possible for it to be thus conveyed to the pleura or meninges, and inflammation of those tissues might be a complicating factor in the disease. A predisposing cause might probably be found in a sluggish condition of the wounded parts, as shown by flabby,

grayish granulations and scanty secretion, as well as in constitutional disease which impaired the venous return, as in disease of the liver, kidney, or heart. The mortality of erysipelas was greater in winter than in summer, being increased by a contaminated atmosphere; greater in the very young or very old than in the middle-aged; greater if the disease arose in the vicinity of wounds; and especially greater if there was any co-existing drain on the system from the heart or kidneys.

The best treatment was probably to rely upon general support and stimulation and to treat constitutional symptoms as they arose. A saline cathartic might be employed, with local depletion of the blood-vessels, to relieve the tension when it was great, and quinine when the temperature ran high. It was very doubtful whether specific treatment, or so-called abortive measures, were of any avail to limit the disease.

Dr. D. B. Sr. JOHN ROOSA was inclined to think, possibly from his surgical education, that erysipelas was always traumatic in its origin. In the one case, where he had not been able to find the lesion, he supposed that it existed so far back on the mucous membrane of the nose as to be out of sight. He did not believe that erysipelas could be generated on a sound skin or mucous membrane. He believed that every eczematous spot and every lesion of the mucous membrane in persons in hospital life, or in delicate persons anywhere, should be healed if possible. He considered the poor ventilation common in houses and hospitals during the winter months as one of the causes of the prevalence of the disease during that season, rather than the low temperature of the air. In his experience, cold did not produce the disease, but he thought the traumatism of a high wind blowing upon the face a very efficient cause. He considered the antipyretic use of quinine as useless and dangerous; the dilatation that preceded the contraction of the blood-vessels by quinine did much harm, the contraction preventing elimination, and when the temperature fell under its use no proper inference could be drawn, because at the best the temperature of erysipelas was capricious. He recalled a case in which the temperature fell from 104° F. to below normal under no other drug than tincture of chloride of iron. He would use no medicine except a purgative, when necessary, but would rely upon good air, good food, stimulation, and attention to the comfort of the patient. Locally he would use the lead-and-opium wash, which he considered the most agreeable, while the most disagreeable that he had found was the English application of white paint.

Dr. W. O. MOORE said that erysipelas was rarely a cause of eye trouble, or if it was the connection was not made out, as a rule, although we met with two forms of intra-ocular disease directly traceable to the poison of erysipelas, especially that of the face. The first was a thrombosis of the retinal vessels, due to a direct propagation of the inflammation along the walls of the vessels, causing thus, finally, an obliteration of their caliber, or in part to compression of the central retinal artery by the products of inflammation around the optic nerve and the orbit. It was rare that one had the opportunity of seeing these cases during the acute erysipelatous period. Since Dr. Knapp's paper was read, in the early part of this year, he had anxiously looked for such a case, and at last, on the 6th of August, he had seen one with the following history:

H. C., a male, aged thirty-nine, had received a slight cut, while being shaved, on the right side of the face near the ear. This soon became affected with the ordinary form of acute erysipelas, in three days spreading over the entire face, though most marked upon the right side. The eyelids were moderately swollen, but no protrusion of the eye was noticed. The erysipelas did not yield promptly; ten days after it began, on opening his eyelids, the patient noticed that his vision was impaired, although to outward appearances the eye was normal. On the fourteenth day Dr. Moore saw him, and, on ophthalmoscopic examination,

found much the same appearances in the fundus as had been seen in Coggin's and Knapp's cases, viz.: *Right eye*.—The media were clear, and the optic disc was clear in outline, but its substance was milky, as was also the retina near the nerve. The vessels were distorted and tortuous, and there was one small hemorrhage into the retina toward the periphery of the fundus. The arteries were smaller than normal, and carried less blood. Vision was $\frac{1}{20}$. One week later the eyelids were well open, the eye was clear and bright, the pupil moderately dilated, vision the same as before, the optic nerve whiter, the retina less milky, the vessels were smaller, looking as if no blood entered them, and the effused blood was undergoing absorption, one of the vessels looking like a white cord. In two months the patient was totally blind in the right eye, the other remaining in good condition. The only change in the appearance of the fundus was in the optic nerve, which was white and atrophic, with only a few vessels containing any blood.

The second picture we saw was that of the last stage of the disease, where the patient came, months after the erysipelas, with the ordinary picture of white atrophy of the optic nerve. In looking over records of cases of atrophy where a probable cause was given, he found, out of two hundred cases, only one upon which erysipelas was supposed to have a bearing. This percentage was, he thought, too high.

Dr. David Coggin, of Salem, Mass., in the "Trans. of the American Ophthalmological Society" for 1879, had reported a case of ischemia of the retinal vessels of both eyes after facial erysipelas.

The patient, who was sixty-two years old, had facial erysipelas of both sides, with some sloughing of the lids. There was chemosis. Five weeks after the commencement of the attack the lids were well open, the pupils dilated, the media clear, the right retinal vessels empty, and the left vessels also bloodless except for one vessel going upward. No difference could be made out between veins and arteries; the discs were of a grayish white, with no capillary vessels present in either eye. There was no cardiac or rheumatic history. Dr. Coggin's idea was that the erysipelatous inflammation was propagated under the capsule to the optic nerve, where it exercised enough pressure to retard the circulation in the retinal vessels, and thus caused thrombosis, or that thrombosis was due to extension of the inflammation to the vessels themselves. The patient never recovered his vision.

Dr. A. Carl, in the "Monatsbl. für Augenheilkunde," April, 1884, had reported a case of blindness from erysipelas. Erysipelas began at the tip of the nose, and extended over the face. Fifteen days from the beginning of the disease the right eye became blind, with protrusion and immobility of the globe. Dr. Carl saw the patient seven weeks after the blindness came on, and found the media clear, $V = 0$, the optic-nerve outlines clear, the disc milky and opaque, and the retinal vessels reduced in number, partially filled with blood, and partly reduced to white cords. Four months after blindness appeared, complete atrophy of the optic nerve was noticed, and some of the arteries had entirely disappeared. The left eye was normal.

Dr. H. Knapp, in a paper read before the Medical Society of the County of New York, March 24, 1884, said: 1. Blindness was produced by compression of the central retinal vessel and thrombosis of the retinal veins. 2. No neuro-retinitis was seen with the ophthalmoscope, but the successive stages of a thrombosis. 3. The white segments in the veins and arteries were white thrombi, and not hypertrophy of the walls of the vessels.

Dr. SENECA D. POWELL considered that the progress of anti-septic surgery during the past few years had done much to limit the spread of erysipelas. He did not think that idiopathic erysipelas, or erysipelas without traumatism, was of uncommon occurrence, especially upon the face. It differed from the traumatic variety in not being contagious. He had seen erysipelas set in after amputation of the breast, beginning about the wound and creeping down the left arm, returning up the arm, passing around the neck, down the other arm, then back across the neck, and again down the left arm, where it ceased. He was in the habit, if the patient had a full, bounding pulse, of

giving liquor ammonii acetatis (1 to 4 drachms), spirit of nitrous ether (1 to 3 drachms), and tincture of aconite-root (1 to 3 drops), every two hours. He used iron only in the idiopathic variety, employing a tincture made from the black oxide of iron three parts, hydrochloric acid ten parts, and alcohol thirty parts, with no water, instead of the official tincture, which contained both nitric acid and water. When, in either variety, the patient began to show signs of debility, he always gave alcohol freely. Locally, he considered the lead-and-opium wash, applied hot and the compresses covered with oiled silk, the best application; or, if this did not relieve the inflammation, heat applied by means of the hot bran-bags.

Dr. C. A. VON RAMDOHR thought that erysipelas depended upon a peculiar coccus, which, if introduced into the circulation of a puerperal woman, might give rise to erysipelas, puerperal fever, or peritonitis, and, therefore, prophylaxis was a very important matter. As to the question of how long a physician should wait after seeing a case of septicæmia, pyæmia, or erysipelas before attending a confinement case, it could be answered by the remark: If the physician knew what disinfection was he might go at once; if not, he should give up attendance altogether. He made it a rule, whenever he had seen a case of erysipelas, to make a complete change of clothing, to take an entire bath, and particularly to disinfect his beard, hair, and hands.

After this process he had attended confinements without any unhappy result. He made it a rule, however, not to examine very frequently after making out the presentation and position. He had seen the progress of the erysipelatous blush apparently checked by the injection of a three-per-cent. solution of carbolic acid into the sound tissue near the margin. Sixteen injections were made, and, though very much reduced at the time, the patient recovered.

Dr. G. B. HORE said it was very fortunate that the mucous membrane of the nose and throat furnished so slight an attraction for the spread of this disease, as compared with the face and the scalp. There was often present an early laryngitis, giving rise to a small, irritable cough, but it was very rare to find, even in extreme erysipelatous inflammations of any of the contiguous parts, a laryngeal inflammation sufficiently grave to induce ulceration, or an edema that would interfere with the respirations. The integument of the nose might be enormously swollen without more than an ordinary accompanying rhinitis, unless the deeper structures became affected, in which case, naturally, the course and duration of the disease were more or less aggravated. Amygdalitis also occurred at times, but was generally self-limited, and abscesses were rare. Altogether, the line of demarcation between erysipelas of the cutaneous surfaces and that of the mucous membrane was distinct, and rendered the latter structure little liable to more than passing subacute inflammations.

Dr. W. M. LESZYNSKY said that during the past week he had had a case of facial erysipelas in which the compound tincture of benzoin had seemed to have a good effect, applied locally as a means of limiting the disease. He had also seen another case in which the injection of a two-per-cent. solution of carbolic acid in different spots about the line of demarcation had seemed to have a beneficial effect. He thought that, in many cases where the recovery from a supposed erysipelas was very rapid, the disease might have been in reality a dermatitis, and the high temperature of erysipelas should be present to establish a trustworthy diagnosis.

Dr. S. J. McURT had used equal parts of carbolic acid and glycerin applied to a zone about two inches in width around the periphery of the inflammation, but in six cases under observation she had not noticed that any particular advantage was

gained by the procedure. She used tincture of chloride of iron internally.

Dr. F. B. CARPENTER considered aconite abortive in the sthenic variety, and cited a case of erysipelas which had occurred three times. The first two attacks, under the local application of the lead-and-opium wash, and the use of tincture of chloride of iron internally, ran their course in ten days; the third, although it began just like the others, was treated with aconite, and the patient recovered in four days.

Dr. A. F. BUECHLER considered that the experiments demonstrating a special coccus for the disease had been conclusive. Not only would inoculation with the culture of the third generation produce the disease, but the transported culture from a distant neighborhood would produce it just as certainly, and in this case it had the peculiarities of the disease as it existed in its native place. The coccus was always found in the lymphatics, and extending not with the current of the lymph but against it. After inoculation the period of incubation was from fifteen to sixteen hours.

Dr. J. H. HAWLEY had noticed that, when erysipelas was present in the hospitals with which he was connected, it was present, as a rule, in the other hospitals and in other parts of the city. A more or less epidemic influence seemed to control its development. He used the lead-and-opium wash, hot, cold, or in poultices, whichever was most agreeable to the patient. When tension existed, he made early and free incisions. He had also used the injections of carbolic acid around the border of the blush, but it seemed impossible to decide what this procedure accomplished, for the course of the disease was so erratic. He thought that the Lister dressing was useful to prevent infection, and had used it with a good result in a case of compound, comminuted fracture of the scapula from a bullet wound, applying it all about the wounded side. Shortly after, the temperature rose to 103° , and an erysipelas developed in the arm of the wounded side, which ran its course without involving the wound under the dressing.

Dr. H. G. LITTLE had used iodoform and collodion (a drachm to the ounce) as an external application, with apparent success. In erysipelas of the scalp in children he had made use of the white lead, which undoubtedly reduced the irritation and scratching, while the spreading of the inflammation was checked.

Dr. C. L. STEVENS, in his practice in Turkey, had met with many cases of idiopathic erysipelas, asthenic in character and resembling typhoid fever, so common in Oriental cities, though having a more favorable prognosis and a shorter natural history. In these idiopathic cases he had learned to rely mainly on proper nourishment, free stimulation, and good nursing, using local applications as palliatives, but with no intention of cutting short the disease.

Dr. C. H. BROWN used Trousseau's mixture as a local application, and thought that when the part was freely painted with it it limited the disease and relieved the pain. He considered that it might be of neurotic origin occasionally. He had seen the vesication following a blister applied for pleurisy take on an erysipelatous inflammation, with rapid improvement of the pleuritic symptoms, and remarked that it had been proposed to inoculate with the erysipelas virus to promote the absorption of such effusions.

Dr. S. M. ROBERTS formerly used equal parts of carbolic acid and oil of turpentine, and had thought that it limited the disease, but he now obtained as good results without it. When hyperpyrexia became dangerous he used quinine if the stomach tolerated it.

Dr. JOHN H. NESBITT had used the nitrate-of-silver pencil at the border of the inflamed surface, and had painted the edges with tincture of iodine and with tincture of chloride of iron in

many cases, without any appreciable benefit in limiting the spread of the disease. In cases of idiopathic facial erysipelas occurring in dispensary practice no internal treatment whatever was used, but he depended entirely on local applications, selecting that which seems to be the most soothing. He preferred the lead-and-opium wash in most cases. Some time ago he had been in the habit of sewing all scalp wounds carefully with catgut, but had frequently found it necessary to cut the stitches within two days, to relieve the pain incident to the tension and erysipelatous inflammation. During the past year he had washed all these wounds with a solution of the bichloride of mercury and then applied iodoform, cotton, and a bandage; under this treatment there had been no inflammation, while in many cases the wound had united by first intention.

Dr. JUSTIN HEROLD said that, while serving as house physician and surgeon of St. Vincent's Hospital, he had had under observation a large number of cases, erysipelas being for a time epidemic in the wards. On the 4th of October, 1883, a man with incarcerated inguinal hernia was operated upon, and the next day facial erysipelas developed, which also spread to the wound. Under energetic treatment this patient recovered, but was the starting-point of all the other cases that rapidly followed. In a few days a number of patients with compound fractures (twenty-six) began to show signs of the disease. The character of the disease was low and diffuse, which made the treatment difficult. One or two died within two weeks, while one other lived five or six months and then died of exhaustion. All had been inmates of lodging-houses before their admission to the hospital, and they were ill-nourished, intemperate, and in bad general health. Several other cases presented themselves at the Out-patient Department about the same time, and they might have produced further infection, while several more were treated in the ambulance, thereby infecting the surgeon, who was obliged to do the dressing in all cases of minor surgery. Even one of the first patients in the new wing contracted the disease in a slight degree. The epidemic became so alarming that all surgical operations were suspended for a time. The speaker himself contracted a facial erysipelas. The epidemic was only controlled by a thorough disinfection of all the contaminated wards by means of sulphur fumes. Whenever the temperature of several patients rose to 103° or over, others, with simple lacerated and contused wounds, would have a rise of temperature and other constitutional symptoms of erysipelas, but no local signs. In none of these cases was the dressing antiseptic in a strict sense. The treatment was both constitutional and local, cachectic conditions were corrected, when present, and light nourishment was ordered in every case. Stimulants, when indicated, were allowed in quantities not exceeding 36 oz. in the twenty-four hours. For high temperature, quinine was used, and to overcome the irritability of the stomach the pharmacopoeial solution of morphine, two drachms every four hours. If vomiting occurred, a hot poultice of mustard was placed over the abdomen, affording instant relief in the majority of cases; if delirium occurred, as it did usually, it was treated with twenty grains of bromide of potassium, five grains of chloral every two hours, with marked relief. Constipation was treated by enemata, and diarrhoea checked by giving five grains of subnitrate of bismuth, a sixth of a grain of hydrochlorate of morphine, and six grains of prepared chalk every three hours. Tincture of chloride of iron was of invaluable service in simple facial erysipelas, but in the other forms it did more harm than good, invariably inducing disturbances of digestion. Locally, the lead-and-opium wash was not of so much service as the one-to-forty solution of carbolic acid, while a wash prepared freshly from the powdered opium did better than either, when applied hot. A solution of nitrate of silver in dis-

tilled water (half a drachm or a drachm to the ounce) stopped the spread of the disease in every case and was a very valuable remedy.

The CHAIRMAN said that during the Franco-Prussian war he had seen erysipelas originating simultaneously in different barracks. Dampness of the atmosphere with a sudden fall of temperature was a prominent cause of the disease. He had seen a case in which the inflammation extended from the face to the mouth, and the tongue became enormously swollen, while the pharynx was invaded and oedema of the glottis occurred. This condition was relieved by incision, but the patient ultimately died. In many cases of simple erysipelas he had used collodion, painting a band an inch or two wide about the limb at some distance above the line of inflammation. After the first coating had dried the operation was repeated three or four times, and the result was constriction of the integument, which appeared to compress the superficial lymphatics and so limit the disease. For the phlegmonous form he had used olive-oil, rubbing it in well every day. In a case where both legs were affected he used the simple oil on one, and an eight-per-cent. carbolized oil on the other, with equally good results. Suppuration did not occur in either. He believed that there was a natural antagonism between erysipelas and pyæmia, so that an attack of the former prevented the latter. At some future time this natural antagonism might be used to practical advantage where pyæmia was feared. Inoculation with erysipelatous matter might be practiced to obviate the disease.

Dr. A. A. ALBURYAN said that, although idiopathic or non-traumatic erysipelas has been abrogated as a special disease by some prominent authorities, cases were met with almost daily in Eastern practice where no traumatism could be found. Local manifestations of erysipelas were often seen, in patients with chronic ulcers, confined to distant and otherwise healthy tissues. As the disease in all probability originated in vitiated air, and perhaps from some special micrococcus, which entered the circulation and produced symptoms of general disease with local manifestations, we had reason to think that the channels through which these microscopic organisms entered the system might be various. If they were able to penetrate through the cutis vera, we might naturally consider them capable of gaining ingress through a mucous membrane, which was practically only skin minus epidermis. Numerous clinical facts affirmed this. Another argument for the existence of a non-traumatic variety was found in the frequent absence of lymphangitis in the primary state of the disease, while in the traumatic form the lymphatic system was involved early. The non-traumatic form was not contagious, in his experience. In Oriental life, where the simplest hygienic laws were disregarded, there were no means of isolating these patients, and one often found a patient suffering with the disease surrounded by his family, who ate and slept in the same room, without taking the contagion. He did not think that one attack predisposed to another, and Fehleisen's inoculation experiments proved that there was an immunity for a period of a few weeks or months. Traumatic erysipelas had no particular period of incubation, but might occur at any time. He had had cases where it had set in in from ten to twelve hours after the operation. Local treatment by protectives was very promising. Collodion in many cases was objectionable, as it prevented cutaneous exhalation. Cold increased the discomfort and delayed resolution. Internally, quinine and iron in large and repeated doses, preceded by a saline purgative, was the usual treatment, both in hospital and in private practice, in Turkey. The mortality was insignificant. Death resulted from asthenia; hence cardiac depressants, if used at all, should be used with caution.

Dr. PHELPS had seen erysipelas cling to a bed, and not travel

about a ward. A patient having died of erysipelas, his bed and room were thoroughly cleansed and disinfected, but even then he had seen the next patient who occupied it attacked in one case. He was removed, and the next occupant also contracted the disease.

Depression of the Occipital Bone.—Histories of cases being in order, Dr. H. G. LYTLE presented that of a child, two months and six days old, with a marked depression of the occipital bone, with overlapping of the parietal. The child had slight convulsive movements of the hands and rolling of the eyes, with a disordered condition of the stomach and bowels. Dr. J. F. Hartigan had reported, in the "American Journal of the Medical Sciences" for January, 1884, forty-nine cases of trismus nascentium as being due to this cause. Dr. Lytle presented this case to show that the displacement of the occipital bone might occur without producing trismus.

Intussusception of the Jejunum.—A specimen was presented by Dr. WILLIAM H. PORTER. The patient, a lad seven years old, had been in the hospital for three weeks prior to his death. His symptoms were those of chronic hydrocephalus. He could not swallow well, and for the last few days was fed with milk through a stomach-tube. His bowels had only been moved by the use of enemata since the 1st of December. There were no symptoms of intussusception. He died from marasmus December 6th. At the autopsy, twelve hours after death, the body was found very thin, the head large, the heart normal, the left lung adherent, oedematous, and congested. There was no evidence of tubercles in either lung. The liver and spleen were normal. The kidneys were the seat of parenchymatous infiltration. At the lower third of the jejunum the intestine was invaginated, but without any evidence of peritoneal inflammation. Dr. Porter thought it of interest in connection with another case in which a similar condition was noted in an old man; in both the lesion was unusually high up, and no symptoms were present before death. The ependyma was distended, but no tubercles were found in the body.

Dr. ROBERTS remarked that at the Foundling Asylum this condition was found quite frequently at autopsies. From its frequency, and in the absence of inflammation and adhesion, he was of the opinion that it was developed just before death or during the death struggle. The intussusception in this case, however, was uncommonly high up in the intestine.

NEW YORK OBSTETRICAL SOCIETY.

Meeting of June 3, 1884.

Dr. HENRY F. WALKER in the chair.

Retained Menses from Imperforate Hymen.—Dr. ROBERT WATTS related the case of a girl, seventeen years old, who had never had any menstrual discharge, but had suffered with symptoms of retention for only two months—abdominal pain and swelling, with a small separate swelling in the right iliac fossa, and distension of the perineum. About a quart of dark liquid blood was drawn off with a large trocar, thorough evacuation being secured by making pressure on the abdomen. The liquid was not offensive. The puncture was then stretched wide open, and warm carbolized water was injected freely. The uterus contracted well, and the swelling in the right iliac region was found to be connected with the ovary. Iodoform gauze was inserted in the vagina, and carbolized injections were afterward used. No unfavorable symptoms occurred, but there was now a tendency to agglutination of the walls of the vagina, in consequence, perhaps, of the over-distension to which the canal had been subjected.

The CHAIRMAN referred to a case that he had seen, in a girl

fifteen years old, in which a free opening was made, and no bad symptoms took place, although no injections were used.

Dr. FRANK P. FOSTER referred to the reasons that had been given by Dr. Emmet, at a previous meeting of the society, why the plan of rapid and complete evacuation should tend to prevent rather than to favor bad results.

The CHAIRMAN and Dr. WATTS thought rapid evacuation was the proper treatment.

Dr. EDWARD L. PARTRIDGE mentioned the supposed danger of the entrance of air, from defective uterine contraction.

Dr. WATTS thought the use of antiseptic injections would overcome that danger, and in this opinion Dr. ALEXANDER S. CLARKE coincided.

Dr. EDWARD H. PEASLEE had heard his father speak of an instance of rupture of the Fallopian tube from too rapid removal of the liquid.

Dr. HENRY D. NICOLL referred to a case that occurred at Bellevue Hospital, in the service of Dr. Isaac E. Taylor, which was complicated with atresia of the lower two inches of the vagina. An operation was performed, ergot was given, and "following down" of the uterus was employed, as after labor.

Mercurial Poisoning from Intra-uterine Injections.—Dr. PARTRIDGE related the history of a case of labor that had occurred at the Nursery and Child's Hospital in which vaginal injections of bichloride of mercury, 1 to 2,000, were used, and the patient did well for three days. On the third day she had a chill, and the house surgeon gave an intra-uterine injection of the same solution. The next day there was another chill, and the injection was repeated. This was followed by bloody passages from the bowels, and death took place. Intense colitis was found post mortem. Dr. Partridge referred to reports of three other cases of supposed mercurial poisoning from the same cause. The patient whose case he had related died within sixty hours from the administration of the first intra-uterine douche.

Dr. COLIN MACKENZIE had known severe uterine colic result from a vaginal bichloride injection.

Cystitis from a Mercurial Injection.—Dr. PARTRIDGE also related a case in which, by mistake, a nurse threw a bichloride injection into the bladder instead of into the vagina, and severe cystitis was set up—quite as much, perhaps, from mechanical violence as from any special action of the bichloride.

Dr. FOSTER referred to a case that had been reported by Dr. Thomas, in which it was a carbolic-acid solution that had been used.

Spontaneous Disappearance of Sterility.—The CHAIRMAN mentioned a case that had come under his observation in which a lady became pregnant for the first time after seventeen years of wedded life. One year after her marriage the os externum was incised, but there had been no subsequent treatment directed to the removal of sterility.

HENRY J. GARRIGUES, M. D.,
B. F. DAWSON, M. D.,
FRANK P. FOSTER, M. D., *ex officio*,
Committee on Publication.

Miscellany.

THERAPEUTICAL NOTES.

The Use of Cold in Midwifery.—Dr. Grognot ("Bull. gén. de thérap.") speaks highly of the emmenagogue properties of external applications of cold. Being convinced that the uterine contractions induced by ergot, faradization, and massage were transitory and ineffi-

cient, he was led to try the effect of cold, which he regards as superior to either of the other agents. He summarizes the advantages of cold as follows: 1. If cold is applied during labor, the contractions become stronger. 2. There is no danger either to the mother or to the child. 3. The agent is always at hand, and requires no instruments for its application. 4. Cold can be used in every stage of labor, for the expulsion of the placenta as well as for that of the fetus.

"Mixed" Anæsthesia.—The practice of preceding the inhalation of chloroform or ether by a subcutaneous injection of morphine or of atropine is advocated by Columbel ("Lyon méd."), who states that the narcosis is more rapidly induced and more complete, that the unpleasant after-effects are avoided, and that the atropine diminishes the irritability of the cardiac ganglia, thus lessening the danger of paralysis of the heart.

The Disinfection of Tuberculous Sputa.—According to the "Centralblatt für klin. Med.," Schill and Fischer have made numerous experiments to determine the best means of sterilizing phthisical sputa, with the following results: 1. Steam sterilized dried sputa in thirty minutes, and liquid sputa in fifteen minutes. 2. A solution of bichloride of mercury, even of the strength of 1 to 500, had no effect. 3. Absolute alcohol was not invariably efficient. 4. It was necessary to use a five-per-cent. solution of carbolic acid before its sterilizing effects were observed.

The Cold-Water Coil.—It is somewhat amusing to read, in the "Wiener med. Blätter," that Dr. Mader, of Vienna, has modified Leiter's metallic coil by substituting rubber tubing for that of lead. The advantages of this new (?) device are set forth at length, the writer being evidently quite ignorant of the fact that the rubber coil has been in use for several years in this city.

Küchenmeister's Treatment of Diphtheria.—The "Allgemeine med. Central-Zeitung" gives the following formula, which has been used by Küchenmeister for several years:

Nitrate of sodium,	
Carbonate of sodium, each.....	30 grains;
Syrup.....	5 drachms;
Water.....	3 ounces.

The dose is not mentioned. Küchenmeister believes that the salts of sodium act directly upon the albuminates of the blood. Several times a day he applies locally a solution of corrosive sublimate (1 to 2,000), and uses the same solution (to which four times as much lime-water has been added) for a gargle, thus turning to account both the dissolving action of the lime-water upon the diphtheritic membrane and the parasiticide properties of the mercurial.

Agaricin.—Piering ("Prager med. Wochenschr.") gives the results of a series of experiments with this drug. It was administered principally to patients with cardiac and pulmonary affections, in doses ranging between one twelfth and one half of a grain. A slight increase in the frequency of the pulse was noted after its use, but no change in the temperature. Sleep was frequently induced. Unpleasant after-effects were never seen, as they sometimes are after the use of atropine. The following is a brief summary of the writer's conclusions: 1. Agaricin is a safe and valuable remedy for the night-sweats of phthisis. 2. It has no influence on normal perspiration. 3. In doses of one sixth of a grain, frequently repeated, it causes a rapid diminution of the sweating, this effect beginning within five hours after its administration is begun. 4. No bad results follow its use.

The Treatment of Polyuria.—Lunin ("Jahr. f. Kinderheilk.") reports a confirmed case of polyuria in which the daily amount of urine was reduced within a week from eight to five litres by seven-grain doses of salicylate of sodium. Valerian was then given (an infusion of the root, 1 part to 20 of water), with the result of further reducing the amount to two litres and a half. Within three weeks the amount of urine fell almost to the normal, and there was a decided improvement in the general condition of the patient.

Turpentine Applications in Rheumatism.—Constantin Paul ("Union méd.") speaks highly of the plan of enveloping the affected joints with thin flannel compresses (not thicker than "a sheet of paper") dipped in oil of turpentine. They should be covered with oiled silk or rubber cloth, and should not be kept on more than an hour, for fear of producing vesication.

Resorcin in the Treatment of Poisoned Wounds.—Anderc ("Monatsh. f. prakt. Dermat.") reports a series of cases in which dissection wounds accompanied by inflammation of the lymphatics, and in some cases by constitutional disturbance, were treated with applications of an ointment containing equal parts of resorcin and vaseline. The urine showed the greenish color indicative of the absorption of the drug, and in every case the pain and inflammation were relieved within a few hours.

Arbutin.—Paschke ("Wiener med. Presse") has tried this glucoside, obtained from the leaves of the *Arcostaphylos uva ursi*, in sixteen cases of blennorrhœa and cystitis, and, so far from its having any diuretic action, there was no change in either the amount or the reaction of the urine.

Phosphorus in the Treatment of Craniotabes.—Betz ("Memorabilien") reports good results from external applications of a mixture of one sixth of a grain of phosphorus and an ounce of olive-oil, unguions being made with it every night and morning.

The Treatment of Rickets.—The ("Centralbl. f. d. ges. Therapie" gives the following formula, suggested by Lesser:

Tincture of rhubarb.	5 drachms;
Acetate of potassium.	2 "
Wine of antimony.	75 minims.

Dose, five to ten drops three times a day, gradually increased to thirty drops.

An Injection for Urethritis.—Cambillard ("Union méd.") suggests the following formula:

Bromide of potassium.	6 parts.
Laudanum.	2 "
Glycerin.	10 "
Distilled water.	150 "

For acute urethritis, attended with painful erections, use four injections daily, the last one to be taken just before going to bed. The liquid should be retained in the urethra for a few minutes, in order to obtain its sedative effect.

Pills for Uterine Hæmorrhage.—Gallard, according to the "Jour. de méd. et de chir. prat.," uses pills made as follows:

Ergotin,	
Subcarbonate of iron, each.	180 grains;
Sulphate of quinine.	36 "
Powdered digitalis.	18 "

Divide into one hundred pills. Four to be taken daily.

Tetanus following Hypodermic Injections.—In the "Gazzetta degli Ospitali" Dr. Bartolazzi reports that, among a thousand cases of malarial disease that he has treated with hypodermic injections of quinine, he has twice met with fatal tetanus. In one instance only two injections had been given, each of six grains of sulphate of quinine and a sixth of a grain of morphia. In the other case but a single injection had been given. He ascribes the occurrence to the neurotic character of the patients, and possibly also to certain atmospheric influences.

Formic Acid as a Germicide.—The conditions of animal life vary immensely; the introduction of a single influence, not apparently of a powerful nature, may determine the death of some organisms. M. Schnetzer, a few weeks ago, communicated some observations to the Académie des Sciences which serve to illustrate the above general principle. He has found that *Bacterium subtilis*, one of the most difficult micro-parasites to kill, dies when in the presence of formic acid. Even when this bacterium has resisted the action of boiling water for one hour, it may be instantaneously killed by formic acid; a drop of water containing a thousandth part of formic acid to a drop of water teeming with thousands of the bacteria, is sufficient to effect the purpose. The swarming fluid so treated may be introduced into the digestive tract with impunity. The author recommends the trial of formic acid on the cholera bacillus, and it may be suggested that its action on *Bacillus anthracis* is equally deserving of experiment. If formic acid should be found to be capable of destroying the dried virus of charbon, provided this chemical agent does not injure imported wool—and in such a diluted

state injury seems impossible—the suggestion that all imported wool be washed in a weak solution of formic acid might be of value in preventing the occurrence of so fatal a disease as malignant pustule and its allies.—*Lancet*.

Accidental Puncture of the Gravid Uterus during Ovariectomy.—In the "Australian Medical Gazette" Mr. George Fortescue reports a successful case of Porro's operation, the details of which are, briefly, as follows: The patient was a young woman (unmarried) who had remarked for several months an enlargement of the lower part of the abdomen. When she was examined, a colloid cyst was diagnosed, occupying the site of the right ovary. It was tapped, and a second, smaller tumor was found on the left side. The patient had missed one menstrual period. Four months afterward the operation was performed, there being no signs of pregnancy save continued suppression of the menses. On opening the abdomen, a large cyst was first punctured and emptied, when a smaller tumor appeared at the wound and was likewise tapped, and a watery fluid was withdrawn. This was then found to be the gravid uterus. It was removed at once, and the patient made a speedy recovery.

A Series of Ovariectomies.—Mr. Meredith, of London, publishes fifty cases of ovariectomy in the "British Medical Journal," the work of three years. Forty-six of the patients recovered, making a mortality of only eight per cent. The operations were all performed under spray, and with due antiseptic precautions, to which course the writer attributes the fact that he was able to dispense with a drainage-tube in all but three cases. Mr. Meredith urges as an argument against hyperpyrexia being due to the absorption of carbolic acid the fact that in forty-two of his cases the temperature did not exceed 102° F. Nine other cases of laparotomy for various causes are appended to the report, of which one was fatal. These statistics are valuable, as the writer is well known to be Mr. Knowsley Thornton's assistant and an able exponent of his methods.

The Results of Removal of the Larynx.—Zesas ("Arch. f. klin. Chir.") sums up the results of this operation as follows:

Diseases.	Cases.	Recoveries.	Deaths.
Sarcoma.	5	2	3
Carcinoma.	60	15	42
Syphilitic Stenosis.	1	..	1
Perichondritis.	1	..	1
Tuberculosis.	1	..	1
Polypus.	1	1	..
Papilloma.	1	1	..
Total.	70	19	48

He infers from these statistics that we can positively state that the removal of the larynx for malignant disease is not a legitimate operation. We must remember that primary cancer of the larynx remains localized for a long time, and rarely gives rise to general infection. Recurrence is more likely in patients of an advanced age.

The Microbe of Syphilis.—M. Bricon contributes an interesting article to the "Progrès médical" upon the "syphilicoccus." After reviewing the literature of the subject, he draws the following conclusions: 1. Syphilis is a parasitic disease. 2. The microbe of syphilis is a micrococcus, because, if we except some few authors who have described it as a bacterium, or bacillus, most writers refer to a micrococcus of a character still undefined. 3. Inoculations made with the products of syphilis have been unsuccessful, or at least doubtful, M. Martineau's unique case (that of an ape) being perhaps an exception.

Surgical Instruments of the Second or Third Century.—The "Union médicale" gives an interesting account of some old instruments discovered by M. Toulouze while making excavations on the site of an ancient Roman way, on the *rue Clovis*, in Paris. The first one had a shaft 14 cm. long, terminating in an olive-shaped knob at one end, and being curved like a crotchet at the other. It was probably used as a probe in cases of foreign bodies at the bottom of a deep wound. The second was a small bronze ear-scoop. The third was an epilation forceps. M. Toulouze assigns these articles to the age of Galen.

Original Communications.

THE RELATIONS BETWEEN TUBERCULOUS JOINT DISEASE AND GENERAL TUBERCULOSIS.*

BY FREDERIC S. DENNIS, M. D.

MR. PRESIDENT AND GENTLEMEN: The past few years have marked important changes in our views regarding the traumatic origin of joint disease. Recently pathologists have proved that joint disease in the great majority of cases is primarily due to tuberculosis, and that traumatism is either only a secondary factor in the causation, or, if it is ever the primary cause, the cases are very limited in number. The experiments and observations which have been made upon lower animals in pathological laboratories appear to accord with what surgeons have found clinically to be the case in studying joint disease in man, and all these experiments in which joint disease is produced artificially in lower animals have been found to have a counterpart in the human body. This radical change of opinion in regard to the etiology of joint disease has not yet been accepted by some surgeons, and the occasion of the meeting of the New York State Medical Association is an appropriate one in which to discuss such an important topic in surgical pathology. The object of the present paper is to present some microscopical and pathological specimens which show beyond peradventure the tuberculous origin of joint disease, and at the same time to avail myself of these specimens to discuss the relation between tuberculous joint disease and general tuberculosis. The time allotted to me does not permit of a discussion of the clinical history, diagnosis, prognosis, and treatment of tuberculous joint disease. A discussion of these topics, which are of paramount importance in connection with tuberculous joint disease, will be deferred for the present, and will form in the future a subject for another paper. Before entering upon a discussion of the relation between tuberculous joint disease and general tuberculosis it is well to attach some definite and precise meaning to these terms. This preliminary step seems necessary, not only on account of the confusion which has been caused by the recent introduction of these terms into surgery and the indiscriminate use of these words by surgical writers, but also because a clear understanding of the nomenclature is indispensable at the outset in order to intelligently discuss the subject.

By a tuberculous joint is meant a joint in the different tissues of which the *Bacilli tuberculosis* of Koch are present, though it does not always follow that they can be found; and by general tuberculosis is meant acute miliary tuberculosis. The *Bacilli tuberculosis*, which are the infective agents, are developed in a central focus, and the focus in the majority of the cases consists of a broken-down, caseous lymphatic gland, and from this focus dissemination of bacilli proceed and cause acute miliary tuberculosis. Another term

for the caseous lymphatic gland is scrofula, and hence it is apparent that scrofula acts by furnishing a suitable soil in which the infective agents develop. It does not come within the province of this paper to discuss the relation of scrofula to tuberculosis; but it will suffice to state that pathological experiments and clinical history prove without doubt that an intimate relation exists between these two affections. The best proof of this statement lies in the fact that the appearance of scrofula is usually associated with the presence of tuberculosis, and that when one condition is present the other condition is almost invariably found. Tuberculous joint disease, however, can develop primarily without the presence of scrofula, or the joint disease can be secondary, as when metastasis occurs from an organ in which infective agents are present. Thus, as metastasis may occur in the lungs from a caseous degeneration of the bronchial glands, so a tuberculous peritonitis may arise from caseous retro-peritoneal glands, or, as in a case recently reported in "La France médicale," a tuberculous osteitis was developed by metastasis from a tuberculous pleurisy which antedated the osteitis a year.

A knee joint may become primarily attacked by tuberculosis without any other focus; this condition has been seen in autopsies, although it is rare in proportion to the number of cases in which the joint disease is the result of a metastasis. It has been shown in quite a number of cases that a primary source of tuberculous osteitis, in the vicinity of the knee, for example, has been a focus situated in the cancellated tissue of the lower epiphysis of the femur, and that the caseous products of the central focus have discharged themselves in a direction away from the knee joint, and that the patient has thus narrowly but fortunately escaped local joint infection. This important clinical fact teaches a practical lesson of great value—that surgical interference can avert and ward off a general tuberculosis if the caseous abscess is trephined, thoroughly gouged out, and carefully scraped with a Volkmann's spoon. Iodoform packed into the abscess cavity and sulcus destroys any of the remaining infective agents, and general dissemination is thus prevented. My own clinical experience has illustrated this in tuberculous osteitis in several cases where this method has been employed. In a recent contribution Professor Volkmann made an analysis of two hundred and fifty cases of excision of the hip for joint disease, and could find in the entire number only five or six cases which were not tuberculous. Koenig relates a case where a resection of the knee was performed for tuberculous joint disease. The wound was aseptic, and, two weeks after the resection, symptoms of acute miliary tuberculosis were well pronounced. The patient died, and the autopsy revealed the presence of miliary tubercles in nearly all the organs of the body. The same author reports another case where, three weeks after resection of the hip, symptoms of general infection supervened, such as headache, projectile vomiting, facial paralysis, and coma. The patient died, and the autopsy showed the cause of death to be acute miliary tuberculosis. In all the organs tubercles were found, and the starting-point or focus was in a broken-down lymphatic, caseous abscess of the

* Read before the New York State Medical Association, November 19, 1884.

neck. This same writer adds still another case illustrating the general principle, but affording at the same time an example of local primary infection in a joint to which reference has already been made. This patient died two weeks after a resection of the hip joint, and the post-mortem examination revealed the cause of death to be acute miliary tuberculosis, and that the starting-point in this case was an abscess in the head of the femur. Recently a surgeon has reported a case of acute miliary tuberculosis developed by dissemination of tubercles from a strumous abscess of the mastoid cells. This case is in marked contrast to two which were sent to me, and in which cases, after trephining, gouging, and scraping the mastoid cells, the patients both recovered and enjoyed excellent health. While these last two cases which have come under my own observation are wholly inadequate to establish any precedent on account of the limited number, they nevertheless serve as links of evidence in the chain of argument which will be presented in the conclusions of this paper. Acute miliary tuberculosis has followed in a limited number of resections, which suggests at once to our minds that any operation which has for its object the destruction of a central focus must be early, thorough, and complete.

Professor Albrecht, of Zurich, has recently published an article in the "*Deutsche Zeitschrift für Chirurgie*" in which he tabulates three hundred and twenty-five cases of joint disease in reference to the aetiology of the affection. He has pointed out in this contribution that the joint disease in one third of the entire number was associated with scrofula, and that in only one sixth of the number could the joint disease be traced to traumatism. He also demonstrated that the mortality in joint disease was twenty-two per cent. greater when scrofula was associated with the joint affection than when the disease could be traced to traumatism.

These clinical facts clearly prove that there must be a causative relation between tuberculous joint disease and general tuberculosis; but exactly what this relation is, and how it is to be scientifically defined, are questions most difficult to answer in the present chaotic state of our knowledge of tuberculosis. I shall endeavor, however, to throw as much light upon the subject as clinical observation and experience permit, and at least show that a relation does exist between these affections.

The distinction between acute miliary tuberculosis and local tuberculosis has been compared by pathologists to the difference between pyæmia and ordinary suppuration. Pyæmia, which is a form of suppuration always associated with metastatic abscesses, is altogether different from common suppuration. Hence it is evident that acute miliary tuberculosis is a special variety of the many diseases termed tuberculous, just as pyæmia is a special variety of common suppuration. While this comparison serves for the purpose of clearly defining the difference between pyæmia and common suppuration on the one hand, with acute miliary tuberculosis and local tuberculosis on the other hand, the comparison has been further employed by pathologists to explain the similarity in the mode of origin and method of dissemination between acute miliary tuberculosis and pyæmia. In pyæmia there is an infective focus from which

infective emboli start, and these develop metastatic abscesses. These infective emboli, as Heuter has shown, contain micrococci, and it is by the presence of these microorganisms that the small miliary and the large metastatic abscesses are produced in distant organs which are connected by vessels proceeding directly from the seat of infection. If the infective embolus is detached from an infective thrombus and swept through the blood-channels belonging to the portal system—as, for example, after the operation for the removal of hæmorrhoids—the metastatic abscess is found in the liver; if to the systemic system—as, for example, after the operation of trephining in compound fracture of the skull—the metastatic abscesses are found in the lungs—though exceptionally these abscesses may occur in the liver, even in an injury to the head, when the emboli are small enough to pass through the pulmonary capillaries, or when they pass by anastomosing vessels direct to the liver. In acute miliary tuberculosis there is also an infective focus, as in pyæmia, and this focus is a broken-down caseous lymphatic abscess, and from this scrofulous focus acute miliary tuberculosis develops and is disseminated throughout the body; but, instead of developing metastatic abscesses, as in pyæmia, there is found a collection, or, in German phraseology, a "herd" of miliary tubercles in the different organs and tissues of the body. As a point of contrast, it is worthy of comment to state that the blood-vessels are the channels of dissemination in pyæmia, and the lymph-vessels principally in tuberculosis. While, then, the dissemination of infective agents is similar in pyæmia and in acute miliary tuberculosis, the nature and characteristics of these infective agents differ widely.

This clinical fact has been proved by experiments upon the lower animals, for pyæmia has been developed in the lower animals by inoculation of putrid material, and acute miliary tuberculosis has been produced by inoculation of the *Bacilli tuberculosis*.

Multiple foci, which are situated in broken-down, cheesy, lymphatic glands, in which bacilli develop and multiply, have been the source from which dissemination of acute miliary tuberculosis has proceeded.

Professor Gross, during the course of some valuable remarks upon the subject of tuberculous joint disease, called the attention of the association to the fact that tuberculous joint disease and general tuberculosis might be compared to the dissemination of carcinoma, which may be local at the outset and general in the later stages of the disease. The analogy, I think, may be carried still further to include sarcoma, in which the infection is local at first and general as the disease progresses. In the case of carcinoma, the disease spreads by means of the lymphatic channels—a method of dissemination which corresponds to tuberculosis—while in sarcoma the disease spreads by means of the blood-vessels. I am inclined to the opinion, after much hard study, close observation, and clinical experience, that all malignant tumors have at the outset a local origin, and that general infection in the great majority of cases can be prevented if surgical interference is made early in the history of the disease. This view is at variance with that of many surgeons, and few authors will indorse the statement. Whatever theory

may be adopted in regard to the ætiology of tumors, whether Cohnheim's, or Virchow's, or other pathologists', they may all be partially, if not entirely, reconciled to this view by clinical experience. Tuberculous joint disease behaves like carcinoma and sarcoma in the dissemination, and the analogy in the clinical history still is observed. In support of the view of the local origin of these diseases, I might cite at least a dozen cases upon which I have operated, and of which I have carefully preserved the notes, which indicate that, no matter what variety of malignant disease is found, early interference may prevent general infection and death. These tumors were all carefully examined by Professor Welch, who pronounced them malignant. I have seen the cases from time to time, and in all of them over two years have elapsed, and in some nearly ten years; at least a sufficient time has passed to make one confident in the belief that return will not take place. I have in my case-book notes of twenty cases which I have examined, and have found death to have occurred by metastasis after removal of a malignant growth; but in all of these cases I am convinced that the operations were deferred until too late, when general infection has already been established, and that, had early operation been resorted to, the cases might have terminated differently. I have still other cases which are under observation, a sufficient time not having elapsed for purposes of establishing any principle.

In the tuberculous joint disease my experience accords with what has already been said in regard to malignant tumors—that early operation will prevent dissemination, and that the disease at the outset is purely a local infection. The number of cases operated upon justifies the statement that early and thorough operation, or, what is better, treatment which is directed to the management of the local infection, is attended with excellent results.

Before referring to the specimens which are to be examined, it may be well to mention a few salient points in connection with the history of the patient from whom the specimens were taken, in order to better understand the relation of the joint disease to the general tuberculosis which followed.

G. V., aged twenty-two, single, by occupation a farmer, was sent to me by Dr. Knight on February 13, 1884. In the spring previous the patient sprained his wrist while plowing. For ten months before admittance to hospital he suffered from an inflammation of the wrist joint, which he attributed to traumatism. Upon examination of the wrist at this time, which was nearly a year subsequent to the accident, there was found fluctuation in the joint. The hand was useless, painful, and swollen. Two incisions were made, the pus was evacuated, and a drainage-tube introduced. The forearm and hand were placed upon an anterior splint. The joint was washed out daily with bichloride solution (1 to 2,000), and the patient temporarily improved. In a fortnight a new inflammation was set up, with cellulitis of the forearm. When this attack had subsided, in April, 1884, the patient was anesthetized, and a thorough exploration of the joint was made, with a view to resection or to amputation, according to the condition of the parts. Upon freely opening the joint by two lateral incisions, the carpal bones were found carious, also the heads of the metacarpal bones and the lower extremities of the radius and ulna. The joint was filled with pus and a gelatinous, pulpy mass. The conditions were so

unfavorable for a resection that amputation was performed by Teale's rectangular flap method. The patient recovered in a rapid and satisfactory manner. The wound healed by primary intention, with no constitutional disturbance. The joint and hand were examined by Professor Welch, who found *Bacilli tuberculosis* in the thickened, gelatinous mass. This at once established with accuracy, and beyond all doubt, the diagnosis of tuberculous joint disease, and forms the most important link in the chain of evidence to follow. Nearly three weeks after the operation, during which time the patient had been up and about, and was apparently in good health, he was seized with violent projectile vomiting, rise of bodily temperature, slight facial paralysis, and severe headache. The vomiting, headache, and delirium persisted, in spite of everything which was done to relieve him. The patient died after eight days; but shortly before death became comatose, and had rigidity of the post-cervical muscles, but no inequality in his pupils. The abdomen was retracted, the bowels were constipated, and the temperature just before death was as high as 103° F.

Professor Welch made the autopsy, which revealed abundant gray miliary tubercles at base of brain, especially in the fissura Sylvii and along the chiasm and tracts. The report of the autopsy further shows that there were tubercles upon the lower part of the convexity of the brain and also on the choroid plexus. The peritoneum, liver, spleen, lungs, pleura, and meninges were studded with gray miliary tubercles. The left kidney was found full of cysts, containing a thin, whitish, turbid fluid, holding cheesy floccules in suspension. The cyst-walls contained cheesy masses; the left ureter was three times its normal thickness; the cavity of the ureter was not much dilated, but contained dry, caseous material, which occluded the lumen of the duct.

The left seminal vesicle contained turbid white fluid. The left epididymis presented a few small caseous foci, and the corresponding testicle contained a few gray miliary tubercles. The left vas deferens was patent, but in some places contained cheesy material in its walls and lumen.

The right kidney was large and soft, and contained some small miliary tubercles, a few of which had cheesy centers. The right ureter was normal. The right seminal vesicle contained also turbid white fluid. The right epididymis was somewhat enlarged, firm, and nodulated, and contained a mass of friable, yellowish-white caseous material in nodules. The right testicle was filled with large, firm, gray, discrete miliary tubercles. The right vas deferens was filled along its whole course with caseous material, which was partly liquefied. There were many other points of interest in the autopsy, which was fully reported through the kindness of Professor Welch; but only those points have been given in detail which have a special reference to the subject under discussion. The prostate gland contained gray miliary tubercles and a few small caseous nodules.

The floor of the pars prostatica of the urethra presented many miliary tubercles, a few of which were cheesy. A few scattered, small, translucent tubercles could be seen in decreasing number along the urethra from behind forward. There was an indistinct, transverse cicatricial band at the junction of the membranous and prostatic portions of the urethra. This, then, is a case of primary genito-urinary tuberculosis; the disease began in the testicle, from this focus general tuberculosis was disseminated, and the relation of the wrist joint to the general tuberculosis is yet to be considered.

The most important questions which naturally suggest themselves in connection with this interesting and classical case are these:

First. Did the joint disease in which the *Bacillituber-*

culosis were found develop the acute miliary tuberculosis? *Second.* Did the scrofulous, cheesy abscess of the testicle afford a suitable soil in which were developed the bacilli which were the cause of the tuberculous joint disease? The solution of these difficult problems is not easy; but, judging from a study of many cases and from clinical experience, and from results obtained by inoculation of lower animals, the conclusions which the author arrives at are that both of these factors enter into the causation of acute miliary tuberculosis, and that in very exceptional cases either of these factors may act to develop acute miliary tuberculosis.

To present these questions again in a suitable form for discussion, without a special application to the case which has just been considered. They are these:

First. Does a joint become the seat of a scrofulous affection absolutely and *in toto* because the bacilli are there from the very outset, and, consequently, give to it the characteristic inflammation? or,

Second. Does a joint become inflamed as a result of traumatism, and then a simple traumatic synovitis or arthritis become converted into a tuberculous joint disease on account of the entrance of the *Bacilli tuberculosis* from a broken-down cheesy, scrofulous gland into an already inflamed joint.

And now, Mr. President and gentlemen, I am enabled to present to you for microscopical examination, through the kindness of Dr. McNamara, one of the assistants in the Carnegie Laboratory, the *Bacilli tuberculosis* which were found in this wrist joint after the amputation, but before any general symptoms of acute miliary tuberculosis were developed. I have also here before me on the table the post-mortem specimens which illustrate the pathological changes of the organs which were infiltrated with acute miliary tuberculosis. The consideration of the clinical history, the demonstration of the bacilli, and the presentation of the post-mortem specimens, form a most interesting and unique group, and the conclusions which I would draw from this case and from these specimens are these: *First*, that acute miliary tuberculosis is an infectious disease which is disseminated through the body from a central caseous focus, which focus in this particular case was situated in the testicle. That I am justified in forming this first conclusion, I have only to refer to the brilliant experiments of Burdon Sanderson, Klein, and others, who have inoculated lower animals with scrofulous matter obtained from a cheesy mass, and who have developed in lower animals a disease similar to acute miliary tuberculosis in man; and, moreover, that the same disease has been developed by inoculation with the pus from a cold abscess and from the granulations of a strumous joint. Further in support of this first conclusion may be cited Max Schüller's interesting experiments, where he caused lower animals to inhale tuberculous products, and developed in them general tuberculosis. The joints of these infected animals were then subjected to contusions, and the result was the development of a tuberculous joint disease. Still further in support of this first conclusion may be mentioned the startling clinical fact that some of these animals which were subjected to imprisonment with the infected animals suffered from joint disease

of a tuberculous character. It is a most noteworthy fact that, whenever rigid precautions were taken to guard against any possible infection, tuberculous joint disease did not supervene upon injury to the joints. These important clinical facts clearly demonstrate to us the infectious character of tuberculosis, and suggest to us the wisdom of recommending precautionary measures in the treatment of the disease from a medical point of view. These experiments upon lower animals place beyond all possible doubt the infectious character of tuberculosis and its intimate relations with acute miliary tuberculosis.

The second conclusion is that the removal of scrofulous, cheesy, broken-down glands, with a central caseation, which are frequently the starting-points of general tuberculosis, is a means of eliminating one of the chief sources of general tuberculosis and tuberculous joint disease. This second conclusion, I am aware, will not be accepted by some surgeons in this audience; but still the evidence is beyond doubt in the minds of those who have given the subject thoughtful study. Monsieur Rendu, whose valuable contributions upon this subject may be found in "L'Union médicale," 1881, has accepted the view that scrofula and tubercle bear the same relation to each other as soil to seed, and that in scrofulous soil tubercles rapidly grow and multiply, until from this focus acute miliary tuberculosis is disseminated. In support of this second conclusion I would state that, in cases of death from general tuberculosis and tuberculous joint disease, the post-mortem examinations show that caseous masses are absent in only twenty per cent. of the cases. In all probability these caseous masses are absent in less than twenty per cent. of the cases, for these masses may have been either overlooked, or changes may have occurred to obliterate the traces of an old abscess. There must be also subtracted from the original twenty per cent. those cases, though few in number, where the joint affection was primarily a local disease. Thus it is evident that, when these deductions are made from the twenty per cent., there is but a small per cent. left of the cases of tuberculous joint disease in which strumous and scrofulous glands are not actually proved to be the starting-points of acute miliary tuberculosis.

In the case the specimens of which are before me, the starting-point was, in all probability, in the caseous, scrofulous, lymphatic abscess of the testicle. That these foci finally are the starting points can be demonstrated almost at any autopsy, for they are easily found, except in the very limited number of cases, amounting only to a small per cent. If, then, acute miliary tuberculosis can proceed from this condition of the gland, it is of the highest importance for surgeons to recognize this clinical fact, and adopt prophylactic treatment. In illustration of this principle, I will cite a case in my own experience, which strikingly affords an example of adopting some preventive means to eliminate this source of infection, so that, should any exciting cause arise to develop or produce a joint disease, the affection may not assume a tuberculous character.

In 1880 I removed from a young man, who resides in a neighboring city, a large cervical lymphatic gland, which had broken down centrally into a caseous mass. The operation was

a difficult one, and involved great danger, owing to a dissection which exposed the carotid artery, internal jugular vein, and the pneumogastric nerves, besides other important vessels and nerves. He recovered from the operation, and since the removal of the caseous mass has enjoyed excellent health. A year subsequent to the extirpation of the caseous abscess and gland I was called to treat the same patient, who was then suffering from a traumatism of the elbow joint, which resulted in a fracture of the olecranon and into the cavity of the joint. I was apprehensive lest a serious trouble might arise with this local injury and general diathesis. The fracture, however, repaired kindly, and the movements of the joint were in no way impaired. Upon recently questioning him as regards the utility of this joint, he tells me that he has no trouble with it, and has played lawn-tennis with this arm just as he was accustomed to before the fracture. It is not extravagant to say that the extirpation of the caseous abscess, with the chain of scrofulous lymphatic glands, from the young man's neck a year previous to the fracture into the elbow joint, removed, in his case, the chief source of general tuberculosis and tuberculous joint disease. Some of the caseous matter from the tumor was injected into a rabbit by Dr. Welch; but this experiment failed to give any positive result. However, a negative result in an experiment of this kind is of little value when it is considered how many conditions may arise to prevent the success of the experiment. A positive result would have placed the subject beyond doubt in the minds of all. Some very recent experiments by M. Arloing showed that inoculations from a caseous lymphatic gland were followed by tuberculosis in a series of guinea-pigs; but all the rabbits remained unaffected. When the caseous material was injected into the peritoneal cavity, the guinea-pigs died of tuberculosis, but the rabbits were still unaffected. This caseous material was taken from the neck in the case of scrofula occurring in a young man. Might not the fact that a rabbit was used in my case for inoculation thus explain the failure? In another set of experiments by M. Arloing, when he inoculated guinea-pigs and rabbits with the products of a strumous joint, both animals had tuberculosis. In still another series of experiments M. Arloing inoculated guinea-pigs and rabbits with the material from a cervical gland taken from a young woman who had no other symptoms of scrofula at the time. Both guinea-pigs and rabbits died of tuberculosis, and the patient also died a month afterward of acute miliary tuberculosis. The failure to produce tuberculosis in the rabbits at one time, and the success of inoculation at another time, can not as yet be explained; but this fact serves to illustrate the point that the failure in my own case in no way affects the question that bacilli were not present because tuberculosis did not follow the inoculation of the caseous mass from the young man's neck.

The patient's general health was improved by the operation, and the deformity was relieved, circumstances in themselves of great importance. But it can also be said that the extirpation of the caseous mass removed one of the chief sources of tuberculous joint disease and general tuberculosis. The young man's mother died of general tuberculosis; his brothers and sister have traces of the same dyscrasia; and with this clinical history, and with caseous lymphatic glands, there are the conditions which are known to favor the development of tuberculous joint disease and general tuberculosis. In the light which experimental pathology has thrown upon this subject, it is fair to assume that tuberculous joint disease and general tuberculosis would have resulted had the caseous lymphatic focus, with its bacilli, been present in the neck at the time of the injury to the joint.

It has been my custom for several years to remove all these cheesy masses whenever it is practicable. They are

sources of great danger, and should be extirpated under all circumstances. I have never had reason to regret an operation which had for its object the removal of these hot-beds for the cultivation and the multiplication of bacilli. I have, on the other hand, seen many cases where I have been convinced that early surgical interference might have rescued the patients from an untimely grave on account of general tuberculosis. Only recently I removed scrofulous glands with central caseous degeneration, and in the cavity of the abscess there were many ounces of pus. The abscess-walls consisted of a pyogenic membrane, and it is in this structure as well as in the pus itself that bacilli are found. The parts were removed as thoroughly as possible by dissection, and the cavity was scraped with a Volkmann's spoon; the wound was then packed with iodoform, and a drainage tube introduced for a few days. His general health, after the operation, rapidly improved, and he is at the present time in excellent health; the deformity is relieved and his mind is free from anxiety. This case is one of many illustrating the value of the principle which has been advanced in this paper, and at the same time is another example of the prophylactic measures which can be resorted to by the surgeon to avert tuberculous joint disease, which, with such conditions, is likely to follow any injury to a joint. Since tuberculosis has been proved to arise from the presence of these broken-down, cheesy, scrofulous glands, the importance of their removal is manifest when statistics show that, of the number of deaths from joint disease, over 50 per cent. are due to acute miliary tuberculosis, and over 25 per cent. to amyloid degeneration. The reduction of this high rate of mortality is to be attained by the removal of the sources of infection, which are caseous scrofulous glands.

To summarize, the line of argument is this: that—

First. Scrofulous abscesses are dangerous, because in them *Bacilli tuberculosis* may develop, and from these abscesses, as infective foci, general dissemination may proceed in the form of acute miliary tuberculosis.

Second. That tuberculous joint disease can produce general infection, or acute miliary tuberculosis.

Third. That traumatism may act as one of the many exciting causes to develop tuberculous joint disease, provided the conditions are favorable.

Fourth. That traumatism alone will not develop tuberculous joint disease except where certain conditions are present.

Finally, Mr. President and gentlemen, it is evident, from a study of this typical case, that much is yet to be learned in reference to the relationship between tuberculous joint disease and general tuberculosis. If the presentation of these microscopical slides—upon which may be seen the *Bacilli tuberculosis* which were found in the wrist joint, and the post-mortem specimens which were taken from the patient whose sad history has been discussed to-night—awakens an interest among the members of this association in this important topic in surgical pathology, the object of the paper will be fulfilled. It is to be hoped that during the coming year the attention of the profession may be directed to this subject, and that our next meeting will witness abundant testimony in the way of collective evi-

dence and clinical observation upon the principle which is involved in the title of this paper. The profession in this city as well as throughout the country are to be congratulated upon the magnificent facilities which will be in a few weeks afforded to them for investigating such subjects as the one which has occupied our attention this evening. All the knowledge which we possess upon this highly important surgical disease, affecting as it does thousands of individuals, has been derived from experimental work upon lower animals, and we are indebted to pathological laboratories for our only reliable guides. May the laboratory furnished and equipped through the generosity of Mr. Carnegie, as well as the forthcoming one to be furnished by the generosity of Mr. Vanderbilt, enable us to discover other important facts in connection with tuberculous joint disease and general tuberculosis. May these laboratories also afford places for investigating such diseases as cholera, yellow fever, and other malignant diseases to which the human flesh is heir. Thus will our knowledge be enriched, our standard of medical education be elevated, and the sufferings of humanity be alleviated. The gift of Mr. Carnegie last spring, and that of Mr. Vanderbilt this autumn, will enable American institutions to keep in the foremost rank in the advancement of medical science. In a recent address of Sir Spencer Wells he calls upon the profession of Great Britain to emulate the worthy example of Germany in establishing pathological laboratories which may be said to be fountains from which all our knowledge must flow. With the munificent gifts offered to the medical profession through the generosity of these private individuals, New York is destined, with its wealth of resource and its vast clinical material, to be the great metropolis of medical education and medical research.

ERRORS OF REFRACTION;

THE IMPORTANCE OF THEIR RECOGNITION AND CORRECTION IN EARLY LIFE.*

By H. E. MITCHELL, M. D.,

THRO, N. Y.

By errors of refraction are meant those anomalous conditions of the eye technically known as myopia, hypermetropia, and astigmatism. These, while forming a large percentage of the cases which the eye-specialist is called upon to treat, are but little known to the laity and but indifferently understood by the medical profession at large. Were the public better acquainted with these conditions, it is safe to say that we should see far less frequently than we do the rounded shoulders and contracted chests that are so common among the school-children of the present day, and which owe their origin largely to the stooping posture rendered necessary by imperfect vision. That defective eyesight, due to refractive errors, is markedly on the increase is a fact beyond questioning. I need not occupy your time in inquiring *why* this is true. The practical question of to-day is, What can we, as physicians, do to check this grow-

ing evil? In this brief paper I desire to present certain points, bearing upon this subject, for your consideration.

In order that we may clearly comprehend what a refractive error really is, let us consider the anatomy of the eye sufficiently to enable us to understand and recognize any departure from its normal condition.

The perfect or emmetropic eye is, as you know, nearly round, and, for five sixths of its extent, covered by three coats or tunics. The outermost, or sclerotic coat, is a dense, fibrous, opaque, unyielding membrane that serves to maintain the eyeball in its proper shape, and, at the same time, to afford protection to the more delicate structures within. Upon its integrity and unvarying shape depends the nice relationship of the various parts which make up this most complicated organ. The middle tunic, the choroid, is vascular and pigmented, and is connected with the inner surface of the sclerotic by a fine cellular tissue. From its rich blood-supply is derived the nourishment necessary for the support of the transparent media within, while its dark pigment serves not only to prevent the entrance of light, except through the pupillary opening, but also to absorb any excess that may have there entered. The innermost coat is the retina, and it is upon this delicate nervous membrane that all images of external objects are formed.

At the anterior portion of the eyeball, and continuous with the sclerotic, is the cornea, which, though fibrous, tough and unyielding, and of uniform thickness, is yet perfectly transparent. A short distance behind this is suspended the iris, which acts as a curtain, and is intended to permit only a proper amount of light to enter the eye through its central opening or pupil. Immediately in rear of this pupil is placed the crystalline lens. This is a double-convex body, measuring nearly a quarter of an inch in its antero-posterior diameter, and is retained in position by its suspensory ligament. It is elastic, and capable of having its focal power increased by the action of the ciliary muscles, producing what is known as accommodation. These ciliary muscles are firmly attached to the sclerotic at the junction of the iris and choroid, and possess contractile powers in a marked degree. The remainder of the globe is occupied by the vitreous body, a jelly-like, albuminous fluid, inclosed in a hyaloid membrane. Between the cornea and lens is a space containing the aqueous humor, divided by the iris into an anterior and posterior chamber, which communicate with each other through the pupil. The optic nerve—the special nerve of the sense of sight—together with the retinal vessels, enters the orbit from behind.

The opening thus formed in the sclerotic is funnel-shaped, and, though strengthened by numerous decussated fibrous bands, is the weakest point in the whole eyeball. The cornea, crystalline lens, and aqueous and vitreous humors are all transparent, and constitute what are known as the dioptric media of the eye.

When rays of light enter the normal eye from a distance of twenty feet or more, they are practically parallel, and, passing through the dioptric media, are brought to a focus, not only on the retina, but at its most sensitive part—a minute, circumscribed foramen, known as the fovea centralis, or yellow spot of Sömmerring. This is absolutely

* Read before the New York State Medical Association, November 18, 1884.

essential to perfect vision, and anything which interferes with or prevents parallel rays from being so focused must necessarily render the object looked at more or less indistinct.

In the three errors of refraction above mentioned we have three distinct ways in which this is brought about. These differ from each other in their *modus operandi*, but produce a common result, namely, *defective vision*.

In myopia, or, as it is commonly called, near-sightedness, we find an abnormal condition due to the elongation of the eyeball antero-posteriorly; and this change of shape is not caused by the bulging forward of the cornea, as is generally supposed, except in rare cases known as conical cornea, but is due to the posterior portion being lengthened or forced backward. Myopia may be acquired or congenital—congenital in the sense, at least, that weak lungs and throats and brain affections are transmissible from parents to children.

Carefully prepared statistics, compiled both in Europe and more recently in our own country, show a steady increase in the congenital form of this affection with each succeeding generation. The acquired form, however, is by far the more common and dangerous one, and its pathology should be carefully considered and clearly understood.

During childhood, the eye, like other organs of the human body, does not attain maturity. The sclerotic, which, later in life, becomes firm and unyielding, is at this period capable of being distorted by undue pressure, and this change of shape may be brought about by any over-exercise of the muscles which control the movements of the eye. Whenever the eye is accommodated for near work, as in reading or study, a corresponding amount of convergence takes place, due to the contraction of the internal rectus muscle, which, through its nervous center, acts in unison with the ciliary muscle by which the change in shape of the lens is effected. As the internal rectus muscle is attached to the sclerotic, it must exert, whenever it contracts, a certain amount of pressure upon the eyeball. This, if too long continued, causes the sclerotic to yield at its weakest point, namely, the optic-nerve entrance. Owing to their close relationship, the choroid is likewise forced back, dragging with it the delicate retina. A clear image can now be obtained only by bringing the object to be examined still closer to the eye, whereupon the increased convergence necessarily causes additional pressure upon the ball. Thus the very attempt we naturally make to overcome this defect only tends to increase and confirm it. Distant or parallel rays of light ought to be focused on the retina without any effort on our part; but, if the retina is too far back, this, of course, will be impossible, as only divergent rays can then be so focused. Hence it is at once apparent that the rational treatment would be to place a minus or double-concave glass of proper focal strength before the eye, which will render the parallel rays divergent. The internal rectus, and with it the ciliary muscle, will now be relieved from extra duty. The increased convexity of the crystalline lens will disappear, and undue pressure upon the eyeball will immediately cease. If this treatment is adopted sufficiently early in life, it is even possible that the natural

shape of the organ may be in part restored, though, as a rule, to check further deterioration of sight is all we may hope for. It should, however, be always borne in mind that myopia in the young shows a tendency to increase, and that, when the inner coats have undergone a certain amount of stretching, permanent and irremediable damage has been done. The moment acquired myopia is developed, the eye becomes a diseased organ, liable at any time, under excessive or improper use, to suffer, through retinal detachment, almost instantaneous blindness.

In hypermetropia we find the eyeball too short in its antero-posterior diameter; consequently the parallel rays are focused *behind* the percipient layer of the retina, and thus a blurred image is formed equally as in myopia. But there is this marked difference between the two defects. If the hypermetropia is not of too high a degree, the person is able to increase the convexity of his lens sufficiently to focus not only parallel rays, but even the divergent ones from a near object. Hence, in early life, while the lens is elastic and the muscles of accommodation are active, no special inconvenience may be experienced. So soon, however, as the child applies himself to his books, or the system becomes enfeebled by disease, the defect becomes at once apparent. The ciliary muscles, which up to this time have acceded without demur to the demands made upon them, now refuse longer to respond to this extra task. If the demand is persisted in, indistinct vision and painful and irritable eyes necessarily result. When the normal eye looks at distant objects, the muscles of accommodation are relaxed and the eye is at rest. Not so with the hypermetropic one. This eye must bring into play these muscles in order clearly to discern remote objects, and must still further make use of them sharply to define near ones. It is constructed to focus convergent rays only, and converging rays are nowhere naturally found except as coming from the interior of a myopic eye. Hence, as Jäger tersely puts it, "the fundus of a myopic eye is the only object under heaven which a hypermetrope is able to see without the correction of his ametropia." When this increased amount of accommodation necessary for close work is continued beyond a certain point, we frequently find that these muscles become spasmodically contracted and refuse to relax at all. Then results the condition known as *ciliary spasm*, which, inasmuch as distant objects are indistinctly seen, so closely simulates myopia that the careless observer may easily be misled. Still another complication may now present itself to add to the patient's discomfort. When speaking of myopia I mentioned the fact that increased accommodation was attended by a corresponding degree of convergence, but, inasmuch as in a hypermetropic eye there is always present a certain amount of accommodation, even when looking at distant objects, it follows that, when the hypermetrope wishes to examine anything close to him, an undue amount of convergence will direct the axis of vision to a point nearer than the object looked at. The image, therefore, will be received upon the retina at points which do not correspond, and diplopia, or a double image, will result. Any attempt to lessen this excessive convergence must be attended by a relaxation of the ciliary muscle, in

which case the lens becomes less convex, and no longer focuses sharply. In order, therefore, to avoid this duplicate image, one eye must be directed to the object, but, in doing this, another nerve-center is brought into play. This center regulates the lateral movements of the eye, and causes the external rectus of one and the internal rectus of the other, which heretofore have been antagonistic, to work in unison, and, therefore, as one eye moves outward the other simultaneously turns inward to a corresponding degree, producing a condition known as internal squint. Persons commonly look upon squint as simply an ugly deformity, but it is more than this. As a general rule, an eye that has squinted for any length of time is practically a worthless eye, for by its non-use, especially in early life, the retina has lost its sensitiveness, and, even though the deformity be removed by operative interference, the amblyopia will still remain. How important is it, therefore, for the future comfort of the child, that this refractive error receive early attention, and how easy, in this instance at least, to remedy nature's shortcomings and the attendant train of evils! If we give our patient a plus or double-convex glass of suitable focal strength, we at once enable him to relax his accommodation for distant objects. His ciliary muscles, no longer constantly contracted, regain their normal tone. The pain and irritability vanish, for the *cause* has been removed, and the eye becomes practically a normal one, capable of doing its full share of work without danger or discomfort to its owner.

The correction of the remaining refractive error, astigmatism, is somewhat more difficult, presenting, as it often does, many complications which require great care and thoughtful study before we can thoroughly master them; but which, when once understood, afford a most satisfactory proof of the great advance that the science of ophthalmology has made in modern times. Astigmatism, as ordinarily met with, consists of a variation in the shape of the cornea from its normal spherical form. It may be elongated in one diameter and shortened in another; or it may be longer or shorter in both, but in a different degree; or normal in one, and longer or shorter in the other. In any case the rays of light emanating from a given point and passing through the cornea are refracted unequally, and are not reunited into one point upon the retina. The image must consequently be blurred, and, in the involuntary effort that the person makes with his accommodatory apparatus to focus for each of these different meridians, the ciliary muscles are so constantly called into play that they become fatigued from excessive action, and asthenopia is added to the patient's discomfort. Strictly speaking, astigmatism is not a separate error of refraction, but rather a combination of the two errors before described. If the cornea projects more than is normal, the eye is just as truly myopic as if the posterior portion was forced backward, and hypermetropia equally results, whether the eyeball is flattened anteriorly or posteriorly. The glass, however, which will correct the simple hypermetropia or myopia will not answer for the hyperopic or myopic astigmatism, for it must be remembered that only a *part* of the cornea requires its refraction to be changed. Take, for instance, a patient who is myopic in one meridian, but hyper-

metropic in the other; now place before such a one a minus glass capable of correcting the myopia, and what is the result? The myopic meridian becomes normal, but the hypermetropic one is rendered still more hypermetropic, and nothing is gained. For astigmatism, then, the glass required will be one that represents a section of a cylinder and not of a sphere. The rays of light, in passing through such a glass, will only be refracted in the plane at right angles to its axis, and, by a combination of these cylindrical lenses, we may use both a plus and minus glass for the same eye.

One peculiarity of this defect lies in the fact that it is only capable of recognition and correction by one who has made eye matters a special study. A person who is nearsighted may select a glass from an optician's stock adapted to his degree of myopia; and even the hypermetrope, if his case is uncomplicated with ciliary spasm, may not err in his selection to any serious extent. Not so with one who is astigmatic. Each case must be worked out by itself, and corrected accordingly.

Among the masses there is undoubtedly a strong prejudice against the early use of spectacles or eye-glasses; but, as the subject becomes more fully understood, this prejudice will melt away. You would think a surgeon sadly remiss in his duties who attempted to treat a fractured limb without a splint, or a diseased hip without extension, and yet you see cases in your daily practice that stand in urgent need of the relief and benefit that the proper glass alone can afford. One may observe on the streets to-day ten children wearing glasses where only one was noticeable a few years since; but where one is seen to-day ten more ought to be seen, for it is safe to say that, if suitable glasses were prescribed before the age of twelve years, the number of persons affected with refractive errors would soon begin to decrease, and the amount of inconvenience and discomfort, and even actual suffering, would rapidly be diminished. The practical conclusion, then, is: let the eyes of the young be examined, and, if found defective, provided with suitable glasses so soon as their possessors are old enough to wear them with safety, and until then do not allow excessive reading or study.

The question now presents itself, How shall the general practitioner, who has paid no special attention to eye matters, recognize these defects? In reply I would suggest, Provide yourselves, first, with an ordinary set of test-types and lines, and, secondly, with an *optometer*.

With the use of the former, doubtless, you are all more or less familiar; but regarding the latter much less is generally known. Yet I have found it of so much assistance, not only in verifying a diagnosis but also in saving time by at least approximating to the required lens, that, with your permission, I will exhibit one and explain its uses.

So far as I know, this form of this instrument is not mentioned in any work on ophthalmology. Neither do I find it advertised or shown in the catalogue of any instrument-maker. I do not even know to whom the credit of its discovery belongs. The one before you was modeled after one obtained, more than a dozen years ago, from the Royal Ophthalmic Hospital in London, and is the simplest and most serviceable form of the instrument that I am familiar

with. It consists, as you see, of a straight rod two feet long by three quarters of an inch wide and one quarter of an inch thick, graduated in inches and fractions thereof. At one end is firmly attached a semicircular metallic frame in which an ordinary ten-inch double-convex lens is placed. A small clamp, so arranged as to slide back and forth upon the stick, contains a card printed in No. 1 or brilliant type. Closing one eye and placing the ten-inch lens before the other, a young normal eye should read the print with ease as it is moved along from the three to the ten-inch point. If one can not read out as far as the ten point, but can read nearer than the three point, myopia is indicated. If not as far as the ten point and not as near as the three point, astigmatism is probable. If beyond the ten point, hyperopia certainly exists; and if to the ten point but not nearer than the five point, presbyopia may be assumed. In the cases of children we can, of course, eliminate this last defect. When more than one refractive error is present we can not recognize so easily or estimate so closely; but even then, by careful observation, the exceptions become nearly as instructive as the rules. Suppose a patient reads easily from the three to the fifteen point. To find the glass which he would require to correct his hypermetropia, we multiply the standard point ten, at which he ought to read, by fifteen, the point to which he actually does read, and divide the product by the difference between the two points: e. g., $10 \times 15 = 150 \div 5 = 30$ —a *plus* $\frac{30}{10}$ glass will therefore correct his manifest hypermetropia. Again, if he reads nearer than the three point and less than the ten point, say from two to six, we probably have myopia to deal with, and we make our calculation as follows: multiply his punctum remotum, which is six, by the standard point, ten, and again divide by the difference: e. g., $6 \times 10 = 60 \div 4 = 15$ —a *minus* $\frac{15}{15}$ lens will practically correct his nearsightedness. In astigmatism this instrument is of no service further than that it enables us to arrive at the diagnosis by exclusion. In this defect we depend principally upon our ophthalmoscope and test-lines. In presbyopia we may take the point five as a standard for the near point and calculate as before. If a person can not read nearer than the eight point, then $5 \times 8 = 40 \div 3 = 13$ —a *plus* $\frac{13}{13}$ will therefore be suitable for his reading-glass.

I do not intend to convey the idea, by what I have just said, that any one having a set of test-types and an optometer would be justified in assuming that he was duly equipped and qualified to prescribe glasses for his patients. Those of us who have devoted special study to this branch know that it oftentimes requires all of the many means at our disposal to arrive at a correct solution of the difficulty; but I do think that, by a little attention to and practice with these two inexpensive and easily understood appliances, any physician may satisfy himself whether or not his patient is in need of an examination at the hands of an oculist, and will have it in his power to contribute largely to the solution of this difficult problem presented to us—viz.: *What shall we do to lessen the rapidly increasing number of defective eyes among children?*

REMARKS ON EXTIRPATION OF THE KIDNEY, WITH CASES OF NEPHRECTOMY FOR PYONEPHROSIS AND NEPHROTOMY FOR RUPTURE OF THE KIDNEY.*

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In September of last year a young woman, aged twenty-three, came under my charge at the New York Hospital for a tumor in the right hypochondriac region, of which she gave the following history:

In 1876, seven years previously, she had a severe and obstinate attack of cystitis, which lasted, in spite of all treatment, for two years, when, at the Roosevelt Hospital, a vesico-vaginal opening was made to place the bladder at rest. This gave such relief that at the end of a year she had the opening closed by an operation, believing herself fully cured of the cystitis.

But this proved not to be true, for the symptoms reappeared, and six months later the wound was reopened. In September, 1880, the fistula, which had become contracted, was enlarged at the Woman's Hospital. After remaining there for some time with moderate improvement, she left that institution, but came back again in September, 1882, the irritability of the bladder being worse, if possible, than ever before. The urethra at that time was button-holed, as it is called by Dr. Emmet; in other words, an incision was made along the lower floor of the urethra, and the superabundant mucous membrane drawn out and removed. But shortly after this she had such severe pain that it led to an examination under ether for stone. No calculus, however, was found in the bladder, but it was observed for the first time that there was a tumor in the right upper part of the abdomen. Thinking this was possibly due to the presence of a calculus in the ureter, a sound was introduced into the right ureter through the vesical fistula, which had been further enlarged, but with negative results. I believe that an operation for removal of the kidney was then suggested, but the patient went out of the hospital, and afterward came under the care of Dr. Peters, at St. Luke's Hospital, where an exploration with the hand in the rectum was made, and also an endeavor to catheterize the ureters. No positive evidence was obtained by these examinations. When the patient entered my ward there was felt on the right side of the abdomen a smooth, but somewhat painful, tumor, which stretched from the edge of the ribs nearly to the crest of the ilium, and which measured some four inches in its transverse diameter. This was believed, from its situation and history, to be a kidney in a condition of pyonephrosis. Aspiration having failed in extracting any pus, and, in consequence of the report furnished that the previous rectal examination had gone against the renal nature of the tumor, the patient was again etherized, and, by the small and skillful hand of Dr. Sabine, the regions of the kidneys were carefully examined, and the tumor proved to be, as thought, a diseased kidney. At the same time, by strongly holding aside the large fistula in the bladder, the mouths of the ureters could be seen and explored their whole distance by flexible metallic sounds. There was no calculus to be discovered, and, while the urine from the affected kidney was flocculent from the admixture of pus, that from the left or sound side was clear and normal. On each side it was voided in intermittent jets.

The patient's general condition was fair, though her annoyance from the continued urinary leakage was great. During the time she was kept under observation before the operation the urine was repeatedly examined, showing a satisfactory spe-

* Read before the New York Surgical Society, December 9, 1884.

cific gravity and absence of casts. This increased the confidence that the left kidney was in a good condition, in spite of the statement that she had had several convulsions during the past three years. During the two weeks prior to the operation her condition began to fail, less perhaps from inflammatory than from mental causes. She was urgent for surgical interference, though aware of the danger of the procedure. An operation possessed no terrors for her, as she had already been anesthetized twenty-three times since her cystitis began. Nephrectomy was performed November 3d, under antiseptic precautions, by a lumbar vertical incision, starting just below the twelfth rib, three inches from the spine, and running to the crest of the ilium. A second, transverse, cut was made from near the top of the vertical one, outward along the edge of the ribs, nearly five inches long. This gave large access to the kidney without opening the peritonæum, which was seen at the outer part of the transverse incision, but sunk out of the way by the semi-prone position of the patient. On exposing the dense fatty capsule, it was scratched through and the kidney partly brought into view. An aspirator showed the situation of an abscess, which was opened to determine whether simple nephrotomy with drainage would suffice. Exploration showed that it was a small cavity, and apparently others existed which did not open into the first one; extirpation was therefore proceeded with. It was at once found that the fat capsule was intimately adherent to the kidney, the true fibrous envelope of the organ was therefore split open, and enucleation accomplished with rapidity everywhere except over the anterior surface of the kidney, where the peritonæum was felt to be very thin. The pedicle was finally reached, and a loop of strong ligature silk cast around the kidney, carried to its base, and tied, after which the kidney was removed. A gush of venous blood ensued, which was only partly arrested after repeated seizures with long force-pressure forceps, but was finally controlled by stuffing the wound full of sponges and turning the patient on her back. The shock was profound, and all the measures to produce reaction were resorted to, such as heat, stimulants, the application of Esmarch's bandages to the limbs, and saline transfusion. The latter, repeated twice to a total amount of twenty-two ounces, gave rise at first to great improvement in consciousness, pulse, and warmth of body, and up to 10 o'clock P. M. she appeared to rally, but then failed steadily, and died at 2 A. M., ten hours after the operation.

The autopsy showed that the hæmorrhage came from a vein of considerable size, 1.5 centimetre above those secured by the ligature and forceps. The fibrous capsule of the kidney was so closely adherent to the condensed fat without that it could be removed only by a close dissection. The peritoneal cavity was not invaded. The left kidney was larger than normal, and, microscopically, the convoluted tubes contained a good deal of fat in their epithelial cells. This change was quite general.

The removed kidney, slightly larger than natural, was riddled with abscesses, which did not communicate one with the other, and only partially with the pelvis. There was no serviceable kidney tissue to be found in the organ.

REMARKS.—The operation of nephrectomy, first resorted to intentionally by Simon,* in 1869, has now been performed, so far as I have been able to investigate, some one hundred and fifty-two times,† with a gross mortality of seventy-six

deaths, or fifty per cent. Nor has the mortality decreased in the last fifty cases, as might have been expected. It is, therefore, yet one of the gravest operations in surgery.

It has been employed for the removal of healthy as well as of diseased kidneys. In the former category may be placed the extirpation for ureteric fistula, for floating kidney, and for laceration of the organ. In the latter, the lesions may be embraced generally under the heads of obstructions, suppurations, and tumors of the kidney.

For wounds or lacerations the kidney has been extirpated five times (Brandt, Marvand, Cartwright, Rawdon, and Bruns), with two deaths. For fistulæ communicating with the ureter, and situated either in the vagina or the uterus, or communicating externally, there have been reported nine cases, with two deaths. For floating kidney sixteen cases are recorded, with six deaths—fourteen by laparotomy and two by the lumbar incision. The mortality for this condition is so high that it would of itself discourage the operation for an affection which does not threaten life. But, since the introduction by Hahn of the plan of fixing the loose kidney after exposure by a vertical lumbar incision, by stitching its capsule to the muscular or skin tissues, the use of nephrectomy for this reason will probably be abandoned. The operation of nephrorrhaphy has been performed sixteen times with but one death—due to a fault of the operator—and with generally satisfactory results. In the case operated on in this way by myself, and published in the "New York Medical Journal" for February 17, 1883, the subsequent history was encouraging, though several months afterward the patient had a severe attack of jaundice, and some symptoms indicative of a perinephritic inflammation. These passed off, and she has recently reported herself as much benefited by the operation. The appreciation of this method is, however, not yet definite, since too short a time has elapsed to determine whether the fixation produced is truly a permanent one.

Although hydronephrosis is one of the conditions for which extirpation of the kidney is done, yet, according to the excellent remarks of Billroth* on the operation (from whom in part my data are obtained), the only diseases demanding the operation are neoplasms and suppuration of the kidney. It is significant that nearly one third (twelve) of the cases of nephrectomy for hydronephrosis have been accomplished through an error of diagnosis, being mistaken generally for ovarian cysts.

The death-rate, whether from this cause or from the inherent difficulty of the removal of a hugely distended kidney, is very large, for, in the twenty-one cases collected by Staples, ‡ where nephrectomy was employed, there were by laparotomy seventeen cases with eleven deaths, and by the lumbar incision three cases with one death. In contrast to

creased to one hundred and thirty-two. Subsequently S. W. Gross collected one hundred and forty-three cases, to which I have added three performed by Dr. Thomas, two by Thornton, and one each by Boothby, Halsted, Morris, and myself, which makes the total one hundred and fifty-two.

* "Ueber Nierenextirpation," "Wien. med. Wochenschrift," Nos. 24, 25, 26, 1884.

† "Hydronephrosis; A Study of Seventy-one Cases of that Lesion," by G. A. Staples. "Jour. of the Am. Med. Assoc.," April 19, 1884.

* Wolcott, of Milwaukee, was perhaps the first to remove the kidney, in 1860, for a carcinoma. The patient died on the fifteenth day.

† The original collection of one hundred cases by Harris, in the "Am. Jour. of the Med. Sci." for July, 1882, was augmented in Bolz's thesis to one hundred and twenty-one cases, which Billroth further in-

this mortality are the striking results obtained by incision and drainage in sixteen cases of this affection collected by the same observer, in which there were fourteen cases of recovery and two deaths. In some of the recoveries it is true fistula resulted, but were reported as diminishing or as not troublesome. In this connection I would refer to the case of hydronephrosis where nephrotomy was successfully used by me, and which was presented to you by Dr. Peters in his paper on Hydronephrosis* before this society February 28, 1882. Bergmann has also stricken out hydronephrosis from the list of diseases requiring nephrectomy for their treatment.

From the foregoing remarks it will be seen that the principal interest connected with the operation of extirpation of a kidney is associated with tumors and suppurative lesions of that organ. In respect to the nature of the neoplasms for which the kidney has been removed, it is found, from the twenty-seven cases collected in Homans's† article on the subject (to which I have been able to add two cases by Thomas, and one each by Vercelli, Little, and Halsted, making a total of thirty-two cases), that they have been sarcoma eighteen times, carcinoma nine times, adenoma once, fibroma once, and of doubtful nature three times. Twenty-two of these patients died, or nearly sixty-nine per cent. This mortality, so much greater than in any other lesion for which nephrectomy has been performed, will attract attention at once, and the inquiry will naturally arise, What has been the outcome even in the successful cases? This point has been well considered by S. W. Gross in the "Medical News" for June 9, 1883, who states that the disease returned in 31·5 per cent. of the cases, and that the average duration of life was rather less than twenty-four months. Taking this fact in connection with the statement of Rohrer and Roberts that the average duration of life without operations is two years and a half for adults, and of Dickinson that in nineteen autopsies, in cases of malignant disease of the kidney, in sixteen cases secondary growths were found, the operation of nephrectomy is at first sight to be discouraged. It may be, however, somewhat premature to pronounce upon this question dogmatically until experience is increased, especially since two of the patients remained well after the operation for twenty-one and thirty months respectively. It certainly seems correct to urge that only small growths should be submitted to the operation, on account of the risks of hæmorrhage and of relapse which more decidedly belong to the larger tumors, and from the fact that in such cases the safer lumbar incision can be employed, for, in thirty-two cases, twenty-five patients were treated by the abdominal incision, of whom twenty died, and seven by the lumbar incision, of whom two died.

By the foregoing process of exclusion it is fairly well shown, I think, that the principal, if not the sole, condition in a diseased kidney that justifies a nephrectomy is a suppurative process. Under this head are embraced abscesses of the kidney, whether single or multiple, or whether in the pelvis or in its substance, or simply pyelitis from cystitis or from renal calculus, etc.

Of such cases Billroth, quoting from Bolz, gives forty instances with eighteen deaths: this I have been able to increase to forty-seven cases, but, from a private communication from Dr. S. W. Gross, I can now present a total of fifty-eight cases, and from an analysis of this number I shall endeavor, if possible, to furnish a due appreciation of some of the mooted points connected with this domain of renal surgery.

The first, and probably one of the most important, considerations in connection with the operation of nephrectomy is the question of not only the existence of a second kidney, but also of its condition. Given abundant pus with certain renal elements in the urine (and even these may be utterly absent, if the abscess does not communicate with the pelvis of the kidney), to which kidney do these characteristics point? We may not always have a tumor to determine this, and this notably in some instances of renal calculi, but, even though a latero-anterior tumor presents itself, yet the status of the second kidney should be determined if possible. Repeated examinations of the urine with absence of casts and epithelium may contribute toward a certainty, but, since we find, even with a presumably sound kidney, so frequently suppression of urine following a nephrectomy (possibly due to a weakened heart from shock), it is not to be wondered at that endeavors have been made in various ways to arrive at positiveness in the solution of this difficult point. One of the greatest arguments made in favor of the abdominal section is the ease with which thereby the existence and general condition of a second kidney is determined. This is a serious consideration, and is brought home to us, for in the cases of nephrectomy performed in this city—viz., those of Peters, Wright, Wylie, Polk, Lange (2), Thomas (3), Halsted, and my own, in all eleven cases with nine deaths—in two there was but a single kidney (Polk's and Lange's). In the first there was congenitally but one kidney, and that abnormally situated in the iliac fossa, as in the specimen of a left kidney, the right being normal, which I can now show you, which was removed from a cadaver by our pathologist, Dr. Peabody, who states that it is the only example of this anomaly met with by him in over two thousand post-mortem examinations. The single kidney is found about once in five thousand bodies; hence such a surgical complication can fairly be disregarded.

In Lange's case of tumor of the kidney the other kidney was found to have been converted by previous changes into a shriveled, caseous cyst.

Undoubtedly the abdominal incision would have permitted the avoidance of this surgical error, but when we reflect on the rarity of such complications, and on Bergmann's statement that in forty cases of nephrectomy for pyonephrosis only once was the other kidney damaged enough to be useless, and also on the mortality that has followed this method of operation for suppurative lesions of the kidney, we are forced to look about for other means than laparotomy for help in this connection. This mortality is as follows: Of the fifty-eight patients referred to, thirty-one recovered and twenty-seven died; sixteen of these were treated by the abdominal incision, with ten deaths, or a mortality of 61·5 per cent., and forty-two by the lumbar

* "Med. Record," May 6, 1882.

† "Boston Med. and Surg. Jour.," January 24, 1884.

incision with seventeen deaths, or a mortality of 42·8 per cent. Separating these cases still further it is found that fourteen of them were for calculous pyelitis, with four deaths, and that of this number only one was treated by the abdominal section, with recovery. This shows clearly that, unless, as was the fact in this case (Wright's), the diseased kidney was at the same time a floating or abdominal kidney, the lumbar incision is by all odds to be preferred, not only because it is safer but because it also permits the simpler extraction of the calculus, and with less risk from the possible urinary fistula that may result. Taking now this form of kidney lesions from the comparison of the abdominal and lumbar modes of nephrectomy, we further find in the forty-four cases remaining that the abdominal incision was employed fifteen times with ten deaths, and the lumbar twenty-nine times with thirteen deaths, again showing the superiority as regards mortality of the posterior or extraperitoneal incision. It is true that a wonderful success has been shown by Thornton in ten nephrectomies of all kinds by the anterior incision without a single fatal result, and Tait has also from a smaller number given his authority in favor of the method; but, on the other hand, it is to be said that a number of these cases were errors in diagnosis and unintentionally attacked, many were hydronephroses, some were tumors, and but few suppurative lesions. Czerny, who of all surgeons has had the largest experience, having removed eighteen kidneys, strongly urges the advantage of the lumbar incision, and Billroth, in comparing the two methods, advocates the posterior operation, which he says should be used, moreover, when "in doubt." The conclusion is therefore evident that for large tumors, which in my judgment negative the operation, and where not only the size, but the amount of hæmorrhage, is to be thought of, the abdominal method is more favorable; but for small tumors, or for pyonephrosis of all kinds, with, in the last class of cases, the risk, always great, of their rupture and infection of the peritoneal cavity, this incision is not to be selected. In addition to these reasons there is another, which has recently been set before us by Lucas* in his excellent paper on this subject, that many cases of suppurating kidney can best be treated after their exposure by the lumbar method, by incision and drainage, and, after these measures have failed to cure the patient, then extirpation can be effected with much less risk to life. He gives six cases, of which all recovered, in which nephrectomy was done in this manner. I confess that, until the logic of his statistics and personal observations had convinced me, I had entertained a reverse idea from an experience obtained in Roosevelt Hospital in 1878. I had then a renal tumor to deal with on the left side, which, after exposure by a lumbar cut and aspiration, followed by an incision to evacuate a large amount of matter, was treated by drainage, a consultation of my colleagues having decided against nephrectomy. The patient did well for a while, but eventually succumbed to a subperitoneal phlegmon, which started from the kidney and descended to the pelvis. I have since watched the prog-

ress of two sinuses formed from similar kidneys, and they have each completely recovered without nephrectomy, and last week nephrotomy and drainage was done in a similar condition by my associate, Dr. Abbe, with so far satisfactory results. All these cases tend to present the claims of a lumbar incision in strong light. The question which therefore we come back to is, whether the determination of the existence and condition of the second kidney can be reliably arrived at. This is truly not easily answered.

Tuchmann was one of the first to continue and employ an instrument like a lithotrite which was intended to occlude at will one of the ureters from within the bladder. It failed to work. Later, when this question obtruded itself in the minds of surgeons, Glück suggested that a preliminary incision should be made in the loin down to the diseased kidney, and its ureter clamped while iodide of potassium was administered, and the urine of the other kidney was extracted from the bladder and tested for iodine. I do not know that this procedure was ever put into practice. Lange suggested an incision over the sound kidney to permit a digital examination of it. Catheterization of the ureters, practicable though difficult in the female, has been called into use, and in that sex affords some hope of certainty. In the male, however, unless through a perineal opening to guide the finger and catheter, the chances are much against its efficiency. Polk,* in his endeavors to avoid a repetition of his case, has devised a clamp, one blade of which is to be passed into the male or female bladder and the other into the rectum so as to compress the ureter between them. This seems rational, and may yet prove of service, though in the male, as for catheterization of the ureters, a perineal opening would probably be necessary. Struck, in 1882, by the efficiency of Davy's rectal rod in controlling the circulation of the iliac artery in an amputation at the hip joint, I thought, by broadening this rod a little, so as to compress more space, that the ureter might at the same time be occluded, and it has proved satisfactory in the single case in which I have yet employed it. In a recent number of the "British Medical Journal" is an account from Mr. Davy himself, in which he states that he suggested this application of his rod in 1873, and that he has recently used it with success.

Another expedient which attracted me yet more favorably is that presented by Dr. H. B. Sands, and is based upon his experience of compressing the iliac artery for over an hour with the hand in the rectum. This surgeon advises that the same means be used to obliterate the ureter temporarily, while the secretion from the other kidney thus separated is collected by a catheter in the bladder and examined. Unfortunately for absolute accuracy the ureter is so soft and yielding as not to be readily recognized by the fingers as it crosses the edge of the pelvis, yet several trials on the cadaver have shown me that in every instance compression of the artery with two or three fingers at the same time occludes the ureter. This method has another great advantage, which is this, that, unless the narrowing of the rectum, which occasionally is met with is present, the hand, if small enough—i. e., less than 8·5 inches in circumference—can be

* "On the Surgical Diseases of the Kidney and the Operations for their Relief." R. Clement Lucas, "British Med. Jour.," September 29, 1883.

* "New York Med. Jour.," February 17, 1883.

introduced up to the sigmoid flexure, and thereby be allowed sufficient excursion to permit reaching the lower portions of the kidney of each side.

Reference must also be made to the device of Silbermann,* who introduces through a large catheter little rubber bags, attached to slender flexible catheters, which are subsequently filled with quicksilver by a syringe, and are intended to plug by their weight the mouths of the ureters. I have not been able to obtain any good results from this instrument, which is now shown to you.†

In a doubtful case, not otherwise to be solved, an exploratory or small abdominal incision, as advised by Tait, could be made. Billroth, it will be remembered, made such incisions twenty-seven times without harm in pyloric cancer, by which he determined the inoperable nature of the disease. The following cases of abscess resulting from laceration of the kidney illustrate the advantage of this procedure:

LACERATION OF KIDNEY; ABSCESS; NEPHROTOMY; RECOVERY.

—Mary Q., a young married woman, aged twenty-six, was admitted October 6, 1884, to the New York Hospital, with the history of a miscarriage in May last, with persistent uterine hæmorrhage until August. During this time she had had repeated attacks of inflammation in the abdomen, the last of which, in August, confined her to the bed. After this she was well until her last menstruation, September 15th. After her usual flow had lasted five days, she began to have fever, with nausea and pain in the abdomen. She was admitted at first to the medical division of the hospital, where a tumor was discovered just above the right ilium, into which a hypodermic needle was inserted and a syringe of pus withdrawn. Her temperature ranged from 100° to 103°, and her urination was frequent and painful, and microscopically contained pus, casts, and blood. On interrogation she positively denied receiving any injury. When first seen the tumor extended from the edge of the liver, whose dullness was continuous with that of the tumor, to nearly the crest of the ilium, and in its transverse diameter it was nearly five inches broad, painful on pressure, smooth and resisting. A hypodermic needle failed on a second trial to extract anything but pure blood. With the history given the nature of the tumor was felt to be doubtful, as exploration *per vaginam* disclosed the adjacent parts uninvolved, and it was therefore determined to delay until the evidence of suppuration was given by aspiration or otherwise. Although her temperature range was, as before, as high as 103° F., her general condition was comfortable. Three days later another puncture in a different locality resulted in the same extraction of blood, but on the fifth day pus was obtained by the same test, the urine being, during this time, nearly normal in character. She was etherized, and in the class of students present was the patient's physician, who furnished the important detail of a kick received by her some ten days prior to her admission to the hospital, from a person whom she was unwilling to implicate, whence her repeated denials when questioned. After the injury there was for two days perceptibly bloody urine.

In the hope of the abscess being a perinephritic one, an exploratory incision was made over the outer edge of the tumor, between the middle of the crest of the ilium and the ribs, so that if it were such, it might be possible to keep behind the

peritonæum, and, if it were not that, the benefit of an ordinary abdominal exploratory section might be enjoyed. Before the peritonæum was fairly reached, the wound permitted a conclusion against an abscess of any size exterior to the kidney, and the finger was therefore carried into the abdominal cavity, and the enlarged, and in spots softened, kidney easily and quickly recognized. The abdominal wound was closed by silk sutures, and the patient turned over, and the usual incision from the ribs to the ilium, along the quadratus lumborum, made, the kidney reached, exposed, and found so softened that with a thrust of the finger a cavity was opened, containing considerable grumous bloody pus, on evacuating which a jagged rent could be felt running toward the free border of the kidney and downward, which was evidently a laceration from the kick. A large-sized rubber tube was inserted into the cavity of the abscess, and the wound antiseptically dressed. The temperature fell at once, and the patient did well subsequently, with a free discharge from the posterior wound for forty-eight hours, when it rapidly decreased. Ten days later the tumor had much diminished in size, but at its lower portion was yet tender. From the wound a probe was crowded in this direction, and gave exit to a small quantity of blood and pus, and over the probe a small rubber drainage-tube was carried, and by the thirteenth day the temperature was normal. The anterior wound healed promptly, the sutures being removed on the fourth day. The posterior wound was entirely healed November 6th.

Now, December 5th, there is felt some hardness anteriorly at the region of the lower part of the tumor, but above normal intestinal resonance. It looks as if there had been some perinephritic inflammation as well as renal.

Incidentally in these remarks the advantage of nephrotomy over nephrectomy has several times been alluded to or illustrated. I beg now to call attention to a further extension of renal surgery of equal interest to us all. I refer to the treatment of calculous suppression of urine.

Roberts, of Manchester, had shown that the diagnosis of such cases was not always difficult, that a history of renal colic of one side at some previous time, with a recent similar attack on the other side, with slight or intermittent discharge of urine of low specific gravity, pointed clearly to the difficulty which terminates nearly always fatally in from six to ten days. In an article on Renal Calculi, published by me in the "New York Medical Journal" of August, 1880, the suggestion was made that as the arrest of calculi took place as a rule either within the first three or four inches of the ureter, or at the vesical end, relief was to be afforded either by an incision in the loin, into the pelvis of the kidney, or the distended ureter, or that by the hand introduced into the rectum the calculus might possibly be squeezed into the bladder, if sufficiently small.

In the "British Medical Journal" for March 8, 1884, Mr. Bennett May recommends nephrotomy for this same purpose, though he had never carried the project into execution.

Lately Mr. Morris, in the "American Journal of the Medical Sciences" for October, 1884, suggests the use of a perineal opening into the bladder to permit its exploration and the detection of a renal calculus when impacted at its vesical outlet, and gives a plate of an elongated gun lancet to accomplish the incision of the vesical tissue covering the calculus. I have been on the outlook for a case in which I could put into operation my surgical convictions on this sub-

* "Berl. klin. Wochenschrift," No. 34, 1883.

† Silbermann shut off the ureter twenty-seven times in the ten women and five men upon whom he employed his instrument.

ject, but its demonstration, as far as I can learn, has only been accomplished by Bardenheuer, of Cologne.

This surgeon, in a case of complete anuria with threatened acute uræmia from calculous occlusion of the right ureter, subsequent to destructive suppurative of the left kidney, cut down upon the right kidney by the usual vertical incision in the loin, and supplementing this by another incision parallel to the crest of the ilium. This gave a free exposure of the kidney, which was separated from its fatty capsule along its anterior face until the pelvis and ureter were reached. A calculus was felt in the ureter, near the kidney, the size of a bean; this was cut open, removed, and the finger passed upward into the pelvis of the kidney, where four other small calculi were found and extracted. The ureter was then sewn up, and the wound packed with an antiseptic dressing. The patient recovered.

THE INCISIONS.—The method resorted to in the case of nephrectomy given in this paper seems to be the best of the lumbar incisions, as it affords the greatest amount of extraperitoneal space. The usual vertical one, running from just below the twelfth rib to the crest of the ilium, along the external border of the quadratus lumborum muscle, or about three inches from the spine, affords ample room for a nephrectomy of a normal kidney, or for a nephrotomy, but, when the organ is much increased in size, additional room is desired. Enlargement of the wound upward to the twelfth rib, or by removal of the rib, is highly injudicious, as has been shown by the dissections of Holl,* who showed that the pleural cavity, in nearly every instance in the examination of sixty cadavers that he examined, descended as low as the first lumbar vertebra, and that the greater part of the last rib is lined by this serous membrane. Even when the rib is wanting the pleura comes down to the ligamentous tract which supplies the place of the bone. Lange has since shown that not infrequently the pleura comes even lower alongside the spine. In the only fatal case of nephrorrhaphy (Ceccarelli's†) the kidney was attached not only to the wound, but also stitched to the twelfth rib by sutures passed around it. Acute septic pleurisy carried off the patient. Increased space can often be obtained, and safely, by cutting across the middle of the quadratus up to the spine. Also the ribs can be strongly raised by retractors. Czerny several times removed the kidney by a simple transverse incision running parallel to the ribs and just below them outward for from six to eight inches. In my own case there was plenty of space created by the cross-incision, like an inverted L, starting from the upper part of the vertical one and longest in its skin divisions. This is well shown in the specimen presented for your inspection. The peritonæum was seen, but it was kept out of the way by the semi-prone position of the patient. This line of incision is also advocated by Lucas. In a comparatively healthy kidney, or where the organ is the seat of a neoplasm, there is but little involvement of the fat capsule, and it can easily be torn or separated from the kidney. In inflammatory lesions, however, this manœuvre can not be utilized, and the capsule proper of the kidney must be incised, and the enucleation accom-

plished under the membrane. This may add to the hæmorrhage, but it is often impossible to do otherwise. The specimen shows this very markedly. Lucas has also advised, where the hæmorrhage is severe after the ligature and ablation of the diseased mass, not to spend time in endeavoring to secure the bleeding points by ligature or forceps, but to plug the wound and check it in this way. I was struck too late in my own unfortunate case with the efficacy of this measure. After several attempts to seize and tie the source of hæmorrhage, found after death to be from a venous trunk above the pedicle, I plugged the wound, as will be remembered, and turned the patient on her back, when very little pressure sufficed to staunch the flow. Had this been done earlier the issue might have been different. Special care must be taken not to cut too close to the ligated pedicle. The application of a straight or curved forcipressure forceps beyond the ligature prior to the ablation is to be advised, to guard against this mishap.

Of the abdominal incisions there are two: (1) the median, running three inches above and below the umbilicus, but less, however, in women with lax bellies. Kocher, however, began his at the xiphoid appendix and ended it at the navel. (2) That of Lagenbuch, along the outer edge of the rectus in the linea semilunaris. By this latter incision the colon is promptly seen, and should be turned to the inner side so that its posterior or outer mesenteric fold can be cut through. This insures less hæmorrhage, and avoids partially a risk that Bergmann ascribes to the abdominal incision, viz., subsequent gangrene of a portion of the intestine from interference with its circulation. When the kidney has been removed Sir Spencer Wells advises the rent in the peritonæum to be closed by sutures; this can not always be done, as the edges are often torn and irregular. There is left necessarily a retro-peritoneal cavity of considerable size, the care of which requires attention. This space, though left to itself by many, has given rise not a few times to abscess or septic processes. Bricchetti, in experimenting on animals, urges the necessity of draining this cavity by a tube carried through the skin-wound in the loin. Barwell has also made a similar suggestion, and it seems based on sound surgical principles, but Boothby is the only one who has so far done this with a satisfactory result.*

The conclusion from the broad consideration of the many cases embraced in the paper is, that the important and dangerous operation of nephrectomy can and should be more restricted in its application, and for disease that it will be most satisfactorily employed in suppurative processes which have not been relieved by the simpler procedure of nephrotomy.

37 WEST THIRTY-THIRD STREET, NEW YORK.

Dr. Squibb's Apparatus for the Quantitative Estimation of Urea.

This simple contrivance, which was fully described in a late number of the "Ephemeris," has been introduced into London, where it seems to have met with great favor, since the "Lancet" speaks of it as a "boom."

* In the discussion that followed the reading of the paper, Dr. Stimson reported a nephrectomy, done in 1883, by abdominal section for a painful movable kidney, in which the posterior peritoneal opening was closed and a drainage-tube carried from the renal cavity out through the loin. The result was a fatal one.

* "Archiv. f. klin. Chir.," vol. xxv, 1880.

† "Centrabl. f. Chirurg.," November 1, 1884.

CYSTOTOMY FOR VESICAL TENESMUS.*

By DR. NICOLAS SAN JUAN, Mexico,

ADJUNCT PROFESSOR OF DESCRIPTIVE ANATOMY, AND PROFESSOR OF ANATOMY, IN THE ESCUELA DE MEDICINA DE MÉXICO; PHYSICIAN TO THE HOSPITAL MORELOS.

IN not a few instances cystotomy is performed with the view of getting rid of the vesical tenesmus which in many cases is unbearable to women suffering from some uterine complaints. This operation is performed under the belief that vesical tenesmus is located in the sphincter of the bladder, and I shall endeavor to prove that this opinion is erroneous, and to show at the same time that vesical tenesmus takes place in the walls of the bladder instead of in its sphincter.

That idea came to my mind when I saw a woman suffering for nine years from a vesico-urethro-vaginal fistula so extensive as to have destroyed the vesico-vaginal septum, and even a portion of the urethra too. During all this time there was always present a very intense tenesmus, although there was no muscular ring in the neck of the bladder. The tenesmus was subdued by means of local treatment of the mucous membrane of the bladder, and I caused it to reappear at my will by irritating only the vesical mucous membrane. I will say, by the way, that, although the fistula remained open in spite of my efforts, the tenesmus never reappeared after the vesical inflammation was over.

Some months afterward I took under my care a young woman affected with a post-partum cystitis that had caused the lining membrane of the bladder and a great portion of the muscular fibers of its neck to be detached. Notwithstanding the absence of the muscular fibers, there was a very severe tenesmus, which at last subsided completely as soon as the sphacelated mucous membrane of the bladder was extracted; the incontinence of urine disappeared after some months.

Another patient, a man, under the care of Dr. Savista, was suffering from a very intense vesical tenesmus, owing to a complaint of his bladder. Dr. Savista performed urethro-cystotomy, believing this tenesmus would be checked by the section of the sphincter, causing it by this means to cease its contractions. The patient felt a little alleviation after the operation, but the tenesmus reappeared a week later, before the sphincter could have been able to contract again, as the incision remained unhealed, and he was enabled to bring about complete recovery only by local treatment of the mucous membrane of the bladder through the canal of the urethra.

Dr. Siceaga attended a man who was suffering from a very severe tenesmus. After the expulsion of a myxoma and a small calculus the patient improved, but the tenesmus came on again some days later with the same intensity. Urethro-cystotomy was resorted to for extracting some calculi, and the vesical sphincter was divided completely; but it was of no avail, as the patient died twenty-four hours afterward, having suffered constantly with the same tenesmus.

I believe these clinical facts not to be numerous enough to solve the question at once, but I will call your attention to these facts: 1. That in the first case *there was no muscular ring in the neck of the bladder*, and, nevertheless, the tenesmus existed and was subdued by improving the condition of the vesical mucous membrane. 2. That in the second patient the tenesmus *was coincident with the absence of the muscular fibers of the neck of the bladder*, and disappeared by removing the irritation of the same bladder. 3. That in the third case the urethro-cystotomy proved unsuccessful, the tenesmus having been controlled only by local treatment of the vesical mucous membrane. 4. And, finally, that in the fourth patient no alleviation at all was obtained by disabling the sphincter from contracting.

Furthermore, the physiologist, Dr. Küss, in his "Treatise on Physiology," expresses himself in such terms, when on the subject of micturition, as to support my opinions. The paragraphs of his book to which I allude read as follows:

The muscles of the vesical walls bear non-striated fibers, and, consequently, their contractions are sluggish; but at the same time they are also very elastic, so that the bladder is very dilatable, and a great quantity of urine may be accumulated therein. When the distension of this receptacle reaches the extreme it becomes a cause of irritation to the muscular fibers, which then contract, and the bladder tends to expel its contents. We shall see presently that it is the reaction of the bladder against its contents that gives rise to the necessity to urinate. When the bladder is laboring under an inflammation its muscular walls become less elastic and react more quickly upon the contents of the receptacle; hence the frequent desire to empty the bladder under these circumstances.

How the bladder when at rest may retain the urine and prevent its escaping through the orifice of its neck is an important and commonly misappreciated question. It is usually said that the neck of the bladder is closed by the contraction of the vesical sphincter surrounding it; but its muscular fasciculi are very slightly marked, and we know, besides, that a muscle can not be permanently in a state of contraction. The neck of the bladder is always closed, because that is the natural form, the normal condition of its sphincter, like that of all kindred muscular rings; they obliterate when at rest, owing to their own elasticity alone, the orifice they are circumscribing. But when any cause, no matter how slight it may be, acts so as to oppose the action of the sphincter, it becomes unable to intercept the passage, and the urine forces its way through it. Females possess but this apparatus of retention, so that a slight effort, a burst of laughter, causes the emission of a few drops of urine. But very special and powerful arrangements are to be noted in males, which practically make the orifice non-existent when the bladder is at rest. First, the axis of the bladder is far from being vertical; it is rather horizontal. As this organ rests upon the symphysis pubis, which is itself horizontal, the excretory duct, the canal of the urethra, is first directed vertically downward, and then proceeds directly forward, the result being a great tendency in this duct to be compressed when the bladder becomes too full. Then comes the pressure of the prostate, a hard organ composed of fibrous tissue, of glands, and of muscular elements. This prostate is traversed by the urethra, and surrounds it in such a way as to obliterate it completely and to bring its opposite walls in contact. This is in male the principal cause of the retention of urine in the bladder when the organ is at rest. Let the prostate be hypertrophied, and then it will constitute

* An extract from a paper read before the Academy of Medicine of Mexico, July 24, 1884. Translated from the author's manuscript by Dr. Ignacio Alvarado.

an obstacle more and more efficacious, even too efficacious, and, on account of this circumstance, it becomes, in aged persons, the cause of the greatest number of pathological retentions—that is to say, of those retentions which the expulsive efforts of the bladder can not overcome. The flattening of the canal of the urethra and the contact of its walls are affected also by the arrangement of the perineal aponeurosis, the fibrous elastic fasciuli of which pull its walls on each side, being attached to the ascending ramus of ischium and to the descending ramus of the pubes, so that the canal is reduced to a transverse cleft at this level, and a certain effort is required to enlarge its lumen. Thus, when urine is not impelled toward the canal of the urethra, toward the vesical orifice, with a certain force, this orifice does not really exist, and it is no wonder that the liquid may accumulate in the bladder, the muscular walls of which are so elastic and so distable. There is, therefore, no contraction, no physiological act, properly so called, that may intervene to prevent the urine from running out; all the conditions are mechanical ones, and they persist after death, for urine is still present in the bladder of a corpse.

It is not to be said that muscular contractions may not intervene to oppose the passage of the urine; on the contrary, there is a muscle intended for this purpose, but it is not placed on the neck of the bladder, but farther out, on the membranous portion of the urethra; this is the *urethral sphincter*, Wilson's muscle, and its contraction is brought about either by a reflex action or by the influence of the will. The following are the circumstances under which it takes place: When the vesical walls have become too dilated by urine, as we have seen already, they react and compress their contents, which then overcome the elasticity of the neck as well as the elasticity of the prostate, and penetrate into the beginning of the canal of the urethra; there the urine comes in contact with a very sensitive mucous membrane, the *prostatic mucosa*, which, as we shall see, presides over a great number of genital reflexes. It is the contact of the urine with this mucous membrane that produces that burning sensation known by the expression "necessity of urinating," and which, like all the sensations of that region, we perceive as taking place in the outer extremity of the canal, in the fossa navicularis. If we pay no attention to this feeling, a reflex will be produced, which is noticeable by a contraction of the urethral sphincter; the urine can not go farther; it is compelled to retreat on account of the contraction of the muscles of the anterior wall of the prostate, and goes back into the bladder, the contractions of which have then disappeared.

The co-ordinate contractions producing micturition are under the influence of the spinal cord, and especially of its lumbar region. Budge has endeavored to localize more exactly the center for the innervation of the bladder, and his experiments have led him to locate it on a level with the fourth lumbar vertebra (in dogs and rabbits). Kupressow places this center between the fifth and sixth lumbar vertebrae.

The sensibility of the prostatic mucous membrane is therefore very important, since it is the starting-point of this essential reflex; the loss of the said sensibility becomes the cause of that sort of nocturnal incontinence usually termed *enuresis*. This involuntary emission of urine, as, in other cases, the involuntary discharge of feces, attests the insensibility of the mucous membranes to the contact of the excremental products, and in the present case the absence of the premonitory feeling of the necessity of emptying the bladder.

The distension of the bladder going on, it reacts again a few instants afterward, the urine penetrates again into the prostatic region, where it provokes again the same reflex, and so on. This explains the intermittent form presented by the necessity of emptying the bladder. Should these phenomena be repeated,

the reflex would be lessened, and the intervention of the will would be necessary to contract the urethral sphincter and prevent the urine from running throughout the canal; hence the painful character of efforts to resist for a long time the necessity of urinating. It is to be seen, then, that, whenever the obstacle opposed to the passage of the urine is really active, it does not lie in the vesical sphincter, but in the urethral muscle, the only striated and voluntary muscle that antagonizes the contractions of the bladder. We shall see hereafter that this muscle plays also a principal part in one of the mechanical phenomena of the genital apparatus—the *ejaculation*.

But, in general, we obey the first warning that the urethral mucous membrane gives us when we feel the first desire of urinating; this sensation seems to be situated in the *fossa navicularis*, but it really exists in the prostatic mucous membrane. The introduction of a probe into the canal gives rise to a sensation identical with that experienced when there is a need of urinating, as soon as its extremity reaches the mucous membrane of the prostate; and, if we feel this sensation to exist in the outer extremity of the urethral canal, it is through the effect of those associated sensations of which we have already shown many instances.

When we yield to the necessity of urinating, the mere impulsion the urine receives from the vesical muscles would be insufficient to overcome the resistance of the canal and to separate its walls, although there is no obstacle opposed by the sphincter; it requires a slight "effort" of impulsion, by which, under the influence of the muscular contractions of the abdomen, the viscera may press upon the bladder, increasing its action upon its contents. We therefore close the *glottis* at the beginning of micturition, and then the vesical contractions are enough to expel the urine; but a new effort is required when micturition is at its end. The lower part of the bladder is in a fixed condition and has a concave shape, and, consequently, it could not be completely emptied if the abdominal viscera did not press on the upper part of the bladder, compelling this part to descend against the bottom of the bladder so as to completely obliterate its cavity; thus, when the bladder is entirely empty, it has, at least in males—but not in all animals—the shape of an inverted dome, and, in fact, that is the shape found in corpses when the bladder is entirely empty.

Once the bladder is emptied, the urethral canal contracts upon itself and expels its own contents; but if this canal is altered or a previous inflammation has caused it to lose its elasticity, then it does not completely expel the urine, which remains in different parts, contributing, by its contact with the mucous membrane, to maintain its pathological condition.

The statements of Dr. Küss being in entire accordance with the clinical facts already spoken of, I think the following propositions may be deduced therefrom:

1. Both vesical tenesmus and the normal necessity of emptying the bladder take place under the same mechanism, with this difference: that the pathological necessity of emptying the bladder is attended with pain, and oftener felt on account of some special conditions of the urine and of the mucous membrane.

2. Tenesmus sets in as soon as an existing cause acts upon any part of the urethro-vesical membrane when this is in a pathological condition.

3. When there is tenesmus, the contractions take place in the body of the bladder instead of in its neck; and the same, I assume, may be applied to every cavity closed by a sphincter, as all the muscular rings are ruled by the same laws.

4. Urethro-cystotomy is available against vesical tenesmus, because the muscular fibers of the bladder do not need to display so great an effort as in the physiological state to cause the urine to run out, as there is no resistance to overcome in the flow through the fistula; and at the same time because it improves by itself the condition of the mucous membrane, and affords more facilities for restoring its physiological state.

THE PREPARATION OF COCAINE.

By A. CASTAING, PH. G.

COCAINE is undoubtedly the great object of interest of the moment, and there is not a physician of progressive ideas who is not anxious to test the marvelous effects of the new anæsthetic. The drug trade, taken unawares by the sudden and sustained demand for cocaine of the various brands which are guarantees of genuineness, is unable to keep pace with it, and is therefore compelled to offer a substitute in many cases inferior to the article called for by the doctor's prescription. The natural consequence is that the anticipated effect is not produced, and the wished for and confidently expected local insensibility is not attained. The practitioner is disappointed at his first experiment, his professional pride receives a shock, and in his mind doubt takes the place of the enthusiasm he was at first inspired with. Yet it would be wrong to cast the blame upon cocaine, for the alkaloid, when real and chemically pure, does truly possess the power of producing local anæsthesia, not only on mucous membranes, but also on the whole surface of the epidermis, and, to a certain depth, beneath it.

Considering the difficulties attendant on obtaining the genuine article, we think we shall do well to make known a way, which repeated trials have shown us to be the most effectual, to extract the alkaloid from the *Erythroxylon Coca*. Having observed that cocaine is extremely susceptible of change under the influence of acids, we studied how to exhaust the coca-leaves without using acidulated liquids, and discovered the following method, by which one grain of cocaine can be extracted from four hundred and eighty grains of leaves. To obtain this result, however, it is requisite that the coca-leaves be of good quality—that is, gathered at the right time and place, properly dried (a leaf with brown spots on it, resulting from moisture, has lost all value)—and, above all, not injured by age or by exposure to the air and consequent evaporation.

MODUS OPERANDI.—On one part (by weight) of coca-leaves pour eight parts of boiling water, and let them steep for half an hour in a closed vessel in a water bath. Pour the whole into a percolator, and, when all the liquid part is strained off, continue the exhaustion of the leaves by pouring on them eight parts of alcohol at 85°. Mix the two liquors and precipitate them by means of acetate of lead, draw off with a siphon, and then add sulphate of sodium to remove the salts of lead. Filter and evaporate at a gentle heat until the liquid has attained the consistence of syrup. Treat the whole with water to separate the resinous part, and then precipitate with carbonate of sodium. The precipitate is then to be exhausted by sulphuric ether, and the ethereal solution, after the ether is distilled, is exposed to

the air until every trace of ether has completely disappeared. By this means is obtained a crystallized residue of a brownish yellow and of a disagreeable smell. This is impure cocaine.

The coloring matter is removed by washing once or twice with cold alcohol. The cocaine, thus purified, appears in the form of transparent prisms, without smell, bitter to the taste, soluble in seven hundred parts of cold water, more soluble in alcohol, and entirely soluble in ether. The solution has an alkaline reaction, and, when applied to the tongue, it imparts a bitter taste and a certain insensibility, followed by a slight sensation of cold, recalling the effect of ether spray upon the epidermis.

Heated to 208° F., the cocaine becomes liquid, and, under the influence of cold, it becomes a transparent mass, which gradually assumes a crystalline form. If it be exposed to a degree of heat higher than 208° F., cocaine changes its color and decomposes. It is inflammable, and burns with a brilliant flame, leaving an ash behind it. It forms soluble salts with acids (its hydrochlorate is the best) and all these salts are more bitter than the alkaloid. It is a compound of carbon, hydrogen, nitrogen, and oxygen.

The medical profession is well acquainted with the effects of wines, extracts, and infusions of coca. I trust that what I have written above will show clearly how its action varies in accordance with the amount of cocaine contained by the leaves, and that, in order to obtain the true therapeutic effects of coca, it is absolutely necessary that the cocaine be titrated at a fixed dose in all its preparations.

Book Notices.

The Principles and Practice of Gynecology. By THOMAS ADDIS EMMET, M. D., LL. D., Surgeon to the Woman's Hospital of the State of New York, etc. Third Edition, thoroughly revised, with 150 Illustrations. Philadelphia: Henry C. Lea's Son & Co., 1884. Pp. xxiv-17 to 876, inclusive.

So accustomed have the medical profession become to believe that whatever Dr. Emmet attempts to do will be done well that the mere fact that he has issued a new edition of his book carries with it the promise of a minute and conscientious revision. The reader is prepared by a glance at the preface for many changes, but their importance is fully realized only after a careful comparison of this edition with the previous ones. We are happy to add that the unique features of the work remain for the most part unaltered, that those familiar chapters which seem to bear the special impress of the author's personality have been retained in their old form. There are certain portions of the book to expunge or to change which would be to render it strange even to its oldest friends. We believe that, in its present form, Emmet's *Gynecology* will attract more earnest attention abroad than has hitherto been the case, and that its readers in general will appreciate its magnitude as well as its sterling honesty. We should only be repeating what has many times been written if we were to enter into a discussion of Dr. Emmet's well-known theories with regard to uterine pathology and treatment. Doubtless we should re-echo the opinion of many readers if we questioned the soundness of many of his statements as viewed from a pathological standpoint. His strength lies in his vast clinical experience and in the practical

sagacity with which he applies facts to the elucidation of theories. Here he is inimitable. Dr. Emmet has been and always will be accused of "riding a hobby," but this is a reproach frequently cast against men who hold and express decided opinions. It is a sufficient commentary upon the boldness and originality of an author's teachings when he feels obliged to wait until a third edition of his work before he finds the profession ready to receive the opinions which he has held for many years.

It is impossible, within the narrow limits assigned to us, to give more than a cursory glance at the main features of the book, dwelling more particularly upon the new chapters. By far the most important innovation is that introduced in Chapter XX, which is entitled "prolapse of the posterior wall of the vagina," instead of "laceration of the perineum," as in the former editions. The first impression of the reader who derives his ideas of Dr. Emmet's new teachings entirely from this chapter will doubtless be similar to that which was created at the American Gynecological Society when his original paper upon this subject was presented. One of the gentlemen then present expressed the opinion that the writer had "wiped out all his former teaching." If any one will carefully review Chapter XX in the old editions, he will not only be convinced that Dr. Emmet has never committed himself to the full extent of the theory that regards the perineum as a supporting structure, but he will discover in the carefully worded statements there made that the innovation is not so startling as it would at first sight appear. The point which will strike the reader as most radical is the fact that between "supposed" and real laceration of the perineum the author admits no middle ground. Unless the tear extends through the sphincter, it is practically disregarded. We believe that this theory will prove a stumbling-block to not a few. The author's arguments as to the cause of prolapse of the posterior wall are urged with all his usual earnestness and sense of personal conviction. They require close attention in order to their perfect understanding, but, once having been grasped, they are convincing. Dr. Emmet has dealt a deadly blow to the mechanical theory of the perineal body, but we question if an idea so firmly grounded as this is in the minds of the American profession can be dislodged in a single generation. But, if the explanation of the cause of the condition is not an easy one for the general practitioner to grasp, how much more difficult will be the description of the author's new operation to one who has never been so fortunate as to witness its performance! It is an operation of which it may be said most emphatically that, to be understood, it must be seen and studied. With all deference to Dr. Emmet's forcible description, we must confess that we could not perform the operation from merely reading his account of it, nor does it seem to us that Fig. 67 (p. 375) gives as clear an idea of it as we might wish. Quite different is the admirable figure which follows (68). But we believe that the operation and the theory upon which it rests are both sound, and that they bear the highest testimony to the originality and careful observation of the author. There will be many readers who will be disposed to question the writer's remark, when he compares the present method of procedure with the old one, that the "operation is easier of execution, although the details may render it more tedious."

Important changes will be noted in the paragraphs on laceration through the sphincter. The author's present practice in closing these ruptures may be summarized by quoting his expression that he now treats this condition "as a recto-vaginal fistula situated in the median line." An essential difference will be noted between the present method of after-treatment in these cases and the old one.

The important chapters upon laceration of the cervix bear the marks of careful revision. Without receding from his origi-

nal position, Dr. Emmet meets the objections which have been brought against his operation, and, in our opinion, answers them in a masterly way. No thoughtful reader will accuse him of not being sufficiently conservative here. These pages have been enriched by the introduction of several new and excellent illustrations. It can not be otherwise than gratifying to one who has labored so long and faithfully to establish a principle which he firmly believes to be right to be able to publish such ample and convincing testimony in its favor. Dr. Emmet's teachings long ago ceased to be local. When he speaks now, it is to a listening world, no longer to the few auditors of his clinic. At the recent medical congress at Copenhagen, Martin referred somewhat reproachfully to the fact that Emmet made no mention in his book of diseases of the Fallopian tubes. That reproach can no longer be made, as Chapter XXXVII is devoted to that subject. Doubtless it would have been easy for Dr. Emmet to introduce a chapter on salpingitis into his former editions, but it is well known that he does not accept any statements which he has not verified by long and conscientious study and observation. Consequently, when he writes on a new theme, we may be sure that he has made it his own and in his own way. We may, perhaps, regret that he has not devoted a little more space to a topic which has now such a living interest, and it must be confessed that the pathology is rather limited, but the chapter is a suggestive one, and implies quite as much as it expresses.

The pages on recent methods in abdominal surgery, extirpation of the cancerous uterus, etc., are fully up to the times. So impressed is the author with the necessity of strict antiseptic precautions that he says, in his usual forcible style, that a man who would knowingly be present at an operation after having been exposed just previously to septic influences "is morally as responsible for the death of the patient as if he were to put a bullet through her skull." This is strong language, but the writer is a man who means what he says. We may regard this as an index of the strength of his convictions upon this important subject.

As we turn to the latter part of the volume, which treats of diseases of the bladder and urethra, it is with the feeling that we are now standing upon solid ground. Whatever unguarded points may exist in other portions of his book, here Dr. Emmet is impregnable. It is as impossible to question the results of his work as it is to refrain from admiration at the patience and ingenuity displayed in it. We have always felt that foreign gynecologists had fixed their attention too exclusively upon his labors in behalf of the operation of trachelorrhaphy, and had too often lost sight of his work in the direction of urethroplasty. This is not strange, seeing that the American profession apparently know little of it. It may be that the subject does not possess enough general interest. Whatever the reason of this apathy may be, we trust that one of the effects of the present volume may be to direct attention to it.

The "button-hole operation," as the author denominates his process of establishing an artificial urethro-vaginal fistula, is another important question which is thoroughly discussed in the present edition. We question if the average reader will share the author's enthusiasm as to the efficacy of this measure when adopted for the relief of cellulitis. The exact manner in which this relief is given is not clear. But Dr. Emmet has been very guarded in his statements, and we can not afford to dismiss lightly what he says on this subject. The operation, when performed for the removal of other than urethral or vesical symptoms, is liable to abuse in the hands of those who are less experienced than he in recognizing the exact indications which render it advisable. Few will doubt its usefulness as a preparatory step in the treatment of strictly urethral affections.

As we have before stated, our space does not allow us to dwell upon minor imperfections. Yet we would call attention to the fact that, while many new woodcuts have been introduced, some of the old ones are not quite so distinct as in the former editions. The general arrangement of the subject-matter has been greatly improved, and it is evident that much attention has been given to correcting certain verbal errors that appeared in the old editions. A few of the latter still remain—for instance, on page 765, it seems to us that the author's intention was that the opening sentence of the last paragraph should be the closing sentence of the preceding paragraph. Such a change would materially modify the sense. Again, on page 217, sixteenth line from the bottom, the word "bladder" is printed, where evidently *rectum* was intended.

It is difficult to think of Dr. Emmet's book apart from its author. Every page is the reflection of his honest and kindly heart. But, while it is so intensely personal, there is no display of erudition, no attempt to magnify the individual rather than the work. Perhaps it is this personal element which has always rendered the book such an authority with us. But this is not enough. It should be more carefully studied than has been the case. Its merits do not lie on the surface. The fact that Dr. Emmet's ideas have been so misconstrued, even in New York, is sufficient proof that the magnitude of his work has not been appreciated. We look for a wider and deeper appreciation still, and we prophesy that it will come, if not now, hereafter. It is seldom given to reformers to enjoy the full fruition of their labors, but, if the admiration and respect of hundreds who have never listened to his voice is any reward to a teacher for over a quarter of a century of faithful toil, Dr. Emmet may be said to have been fully repaid.

BOOKS AND PAMPHLETS RECEIVED.

A Manual of Bandaging. Adapted for Self-Instruction. By C. Henri Leonard, A. M., M. D., Professor of the Medical and Surgical Diseases of Women, and Clinical Gynecology, Michigan College of Medicine, etc. With One Hundred and Thirty-nine Engravings. Second Edition, revised and enlarged. Detroit: The Illustrated Medical Journal Co. Pp. 159. [Price, \$1.50.]

Surgical Handicraft. A Manual of Surgical Manipulations, Minor Surgery, and Other Matters connected with the Work of House Surgeons and Surgical Dressers. With Two Hundred and Eight Illustrations on Wood. By Walter Pye, F. R. C. S., Surgeon to St. Mary's Hospital, etc. Philadelphia: P. Blakiston, Son & Co., 1884. Pp. xx-544. [Price, \$5.]

A Text-Book of Hygiene. A Comprehensive Treatise on the Principles and Practice of Preventive Medicine from an American Standpoint. By George H. Rohé, M. D., Professor of Hygiene, College of Physicians and Surgeons, Baltimore, etc. Baltimore: Thomas & Evans, 1885. Pp. ix-324.

The Law and Medical Men. By R. Vashon Rogers, Jr., of Osgoode Hall, Barrister-at-Law. Toronto and Edinburgh: Carswell & Co., 1884. Pp. xiv-214.

Elements of Surgical Diagnosis. By A. Pearce Gould, M. S., M. B. Lond., F. R. C. S. Eng., Assistant Surgeon to the Middlesex Hospital, etc. Philadelphia: Henry C. Lea's Son & Co., 1884. Pp. viii-584.

Intestinal Obstruction: its Varieties, with their Pathology, Diagnosis, and Treatment. The Jacksonian Prize Essay of the Royal College of Surgeons of England, 1883. By Frederick Treves, F. R. C. S., Surgeon to and Lecturer on Anatomy at the London Hospital, etc. Philadelphia: Henry C. Lea's Son & Co., 1884. Pp. x-515.

The Basic Pathology and Specific Treatment of Diphtheria, Typhoid, Zymotic, Septic, Scorbutic, and Putrescent Diseases generally. By George J. Ziegler, M. D., late Physician to the

Philadelphia Hospital, etc. Philadelphia: George J. Ziegler, M. D., 1844. Pp. 225. [Price, \$2.]

Spinal Deformity in Relation to Obstetrics. By A. H. Free-land Barbour, M. A., B. Sc., M. D., F. R. C. P. E., Assistant to the Professor of Midwifery in the University of Edinburgh, etc. Edinburgh and London: W. & A. K. Johnston. 4to, pp. vi-36, and 38 plates.

Transactions of the Medical Society of the State of Pennsylvania, at its Thirty-fifth Annual Session, held at Philadelphia, May 14, 15, 16, 1884.

Vick's Floral Guide.

Contribution à l'étude de la sclérose multiloculaire chez les enfants. Par le Dr. Moncorvo, Professeur de clinique des maladies des enfants à la policlinique de Rio de Janeiro, etc. Paris: O. Berthier, 1884. Pp. 56.

De la nature de la coqueluche et de son traitement par la résorcine. Par le Dr. Moncorvo, etc. Rio de Janeiro: C. Leuzinger & Fils; Paris: O. Berthier, 1883. Pp. 97.

Da Dilatação do Estomago nas Creanças e seu Tratamento segundo as Lições feitas na Policlinica do Rio de Janeiro. Pelo Dr. Moncorvo, etc. Rio de Janeiro: G. Leuzinger & Filhos, 1883. Pp. 79.

Wanderversammlung der Südwestdeutschen Neurologen und Irrenärzte in Baden-Baden am 14 und 15 Juni, 1884. [Reprint from the "Archiv für Psychiatrie."]

Extension in the Treatment of Diseased Vertebrae. By Buckminster Brown, M. D. [Reprint from the "Boston Medical and Surgical Journal."]

Correspondence with T. Spencer Wells, F. R. C. S., etc., on Ovariectomy. Third Edition, with an Appendix. London: Pickering & Co., 1882. Pp. 40.

Caries of Human Teeth. By Frank Abbott, M. D. [Reprint from the "Dental Cosmos."]

Microscopical Studies upon the Absorption of the Roots of Temporary Teeth. Whitney Memorial Prize Essay of the Dental Society of the State of New York, 1884. By Frank Abbott, M. D. [Reprint from the "Independent Practitioner."]

Report on a Case of Acute Mania. Treatment in the Acute Stage by Exercise and Feeding.—Recovery. By Alex. Nellis, Jr., M. D., Willard, N. Y. [Reprint from the "Alienist and Neurologist."]

The Ambulance Movement in Scotland. By James Whitson, M. D., F. F. P. and S. G., F. R. M. S., Glasgow. [Reprint from the "Edinburgh Medical Journal."]

Leonard's Physicians' Pocket Day-Book.

Annual Report of the Surgeon-General, United States Army, 1884.

The Dry Treatment of Chronic Suppurative Inflammation of the Middle Ear. By Charles J. Lundy, M. D., etc. [Reprint from the "Transactions of the Michigan State Medical Society."]

Muriate of Cocaine in Ophthalmic Surgery. By C. J. Lundy, M. D., etc. [Reprint from the "Physician and Surgeon."]

Degeneration the Law of Disease. By L. A. Merriam, M. D., etc. [Reprint from the "St. Louis Courier of Medicine."]

Transactions of the Michigan State Medical Society, for the Year 1884.

Malformation of the Female Sexual Organs resulting from Arrest of Development. By B. Bernard Browne, M. D., etc., Baltimore. [Reprint from the "Journal of the American Medical Association."]

The Preparation of Liebig's Food. By E. T. Williams, M. D. [Reprint from the "Boston Medical and Surgical Journal."]

Membrana Virginitatis. By E. S. McKee, M. D., etc. [Reprint from the "Nashville Journal of Medicine and Surgery."]

Irregular Contraction of the Uterus. By E. S. McKee, M. D., Cincinnati. [Reprint from the "Columbus Medical Journal."]

THE
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Edited by
FRANK F. FOSTER, M. D.

NEW YORK, SATURDAY, DECEMBER 27, 1884.

THE REPORT OF THE SURGEON-GENERAL OF THE ARMY.

THE condensed nature of the last annual report of the Surgeon-General of the army renders it anything but light reading; the fifty-eight pages comprised in it represent an immense amount of patient and accurate work. It appears that the whole number of deaths was two hundred and seventy-two, seventy-nine of which were due to injuries. Some interesting statistics are given, embodying a comparison between the health of the white troops and that of the colored troops. There were four times as many deaths from diseases of the respiratory organs among the latter as among the former. There were two hundred and twenty-two cases of typhoid fever in the army during the year, thirty-eight of which proved fatal. Attention is called to the fact that this is double the highest rate of prevalence recorded in any other year since the war; but, to offset this, the mortality has been reduced from twenty-one to sixteen per cent. Some valuable statements are furnished as to the causes of the occurrence of the disease at different stations, Jefferson Barracks, Mo., being regarded as the starting-point of the infection. Only one case of yellow fever was reported from the entire army.

The report shows that the Army Medical Museum has been enriched by a number of new specimens, so that the whole collection now includes 23,141; and that the Library of the Surgeon-General's Office has been increased by the addition of four thousand volumes and fifty-five hundred pamphlets, making the total numbers now 65,738 volumes and 86,503 pamphlets. It is stated that the number of persons making use of the library has shown a decided increase, and that every effort is being made to render the collection exhaustive. Obituary notices of Surgeon-General Crane, Surgeon Cuyler, and Surgeon Woodward are included in the report. The pamphlet closes with several statistical tables, evidently compiled with the care and accuracy that characterize the work done by the medical corps. We can not over-estimate the importance of such statistics as these, gathered as they are by a number of intelligent and thoroughly educated observers, who combine [with their medical acquirements the habits of rapid decision and prompt execution learned in their military discipline. There is always a unity, together with clearness and brevity, about the medical reports of the army that renders them specially valuable for reference. We heartily congratulate Dr. Murray upon his first annual report as Surgeon-General.

NEWS ITEMS, ETC.

Infectious Diseases in New York.—We are indebted to the Sanitary Bureau of the Health Department for the following

statement of cases and deaths reported during the two weeks ending December 23, 1884:

DISEASES.	Week ending Dec. 16.		Week ending Dec. 23.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid Fever.....	32	7	19	5
Scarlet Fever.....	101	21	92	20
Cerebro-spinal meningitis....	5	3	6	7
Measles.....	147	19	103	23
Diphtheria.....	76	32	62	28

The Death of Professor Carl Vierordt, of Tübingen, is reported in the "St. Petersburg medicinische Wochenschrift" as having taken place on the 22d of November, in the sixty-seventh year of his age, after a lingering illness.

The Death of Professor von Wittich, of Königsberg, is announced in the "Lancet."

Army Intelligence.—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from December 14, 1884, to December 20, 1884:*

LAUDERDALE, JOHN V., Captain and Assistant Surgeon. (Fort Sully, Dakota Territory.) Granted leave of absence for one month, to take effect about December 20, 1884. S. O. 146, Department of Dakota, December 9, 1884.

COMEGYS, E. T., Captain and Assistant Surgeon. Granted leave of absence for one month. S. O. 234, Department of the Missouri, December 8, 1884.

PILCHER, J. E., First Lieutenant and Assistant Surgeon. Ordered to Fort Custer, Montana Territory, for duty. Order assigning him to duty at Fort A. Lincoln, Dakota Territory, amended. S. O. 144, Department of Dakota, December 8, 1884.

Naval Intelligence.—*Official List of Changes in the Medical Corps of the United States Navy for the week ending December 20, 1884:*

KINDLEBERGER, D., Medical Inspector. Detached from the Hartford, and placed on sick leave.

Society Meetings for the Coming Week:

TUESDAY, December 30th: Boston Society of Medical Sciences (private).

WEDNESDAY, December 31st: Auburn, N. Y., City Medical Association; Berkshire District, Mass., Medical Society (Pittsfield); Cumberland County, Me., Medical Society (Portland).

SATURDAY, January 3d: Clinical Society of the New York Post-Graduate Medical School and Hospital; Miller's River, Mass., Medical Society.

Letters to the Editor.

A CARD FROM DR. FORDYCE BARKER.

To the Editor of the New York Medical Journal:

SIR: Will you allow me a little space to express the deep feeling of my heart at the reception of a great number of letters since last Friday morning? As, from the medical profession of this city and Brooklyn, I have already received more than two hundred, and very many letters and numerous telegrams from other places, it is quite impossible for me to send an acknowledgment to each writer, I must pray my friends to accept my thanks through the medium of your journal.

FORDYCE BARKER.

MONDAY EVENING, December 22, 1884.

Proceedings of Societies.

NEW YORK SURGICAL SOCIETY.

Meeting of December 9, 1884.

The President, Dr. ROBERT F. WEIR, in the chair.

Imperforate Anus; Fistulous Communication between the Rectum and Vagina.—Dr. C. K. BRIDDON presented a child two years old, which he saw for the first time Saturday last, at the Presbyterian Hospital. The mother stated that it had retention of urine, for which the catheter was used twenty-four hours before, but that since the catheterism no urine had passed. She further stated that the fæces came from the "front passage," and that sometimes the urine was clear and sometimes it was foul with fæces. On examination, it was found that the child's belly was enormously distended, that the distension belonged to the alimentary canal, and was particularly marked at the sides of the abdomen, but especially on the left side, where a hard tumor could be felt distinctly. Dr. Briddon introduced a catheter into the bladder, and about eight ounces of perfectly clear urine were withdrawn. While the catheter was tightly compressed by the urethra, an instrument sufficiently large being used to fill it to distension, a small quantity of fecal matter passed from the vagina, and, on inspection, it was found to come from a fistulous communication with the rectum.

His impression then was that it was a case sufficiently urgent to demand immediately the operation of inguinal colotomy, but without trouble he introduced an elastic catheter into the intestine through the vagina, and then pumped in warm water, and allowed it to return, bringing away fluid fæces. The injection of the intestine was continued for about an hour and a half, and during this time friction of the belly was made with vaseline. At the end of that time the alimentary canal was apparently entirely empty. The child was then sent home with the direction to return on the following Monday, when the injections were repeated. It was well known that fistulous communication between the rectum and bladder might go on without giving rise to much trouble during infantile life, but, as soon as the stools become formed, intestinal obstruction was likely to occur, which would call for interference of some kind. Dr. Briddon found that he could pass the sound readily upward in the alimentary canal so that it could be felt through the integument in the left inguinal region. Withdrawing the sound a trifle and reversing it, he could then feel the end of the instrument just in front of the point of the coccyx. He contemplated either making an incision where the natural opening should be, removing as much of the coccyx as might be necessary, and then dissecting up to the intestine, making an opening in it, and stitching its edges to the skin, leaving the recto-vaginal fistula for after-treatment in adult life; or performing Rizzioletti's much more complete operation, which consisted in making an incision in the median line of the fourchette as far back as necessary, separating the entire wall of the rectum, bringing it down, and placing it behind the normal position in this particular instance, as was rendered necessary by the position of the ischia. After the rectum was attached to the integument immediately in front of the coccyx, the vaginal wound was to be stitched from within, and a perineum formed by coaptation of the sides. In six of the cases reported in Curling's work on the rectum the results had been very good in after-life.

Dr. J. L. LITTLE has seen this child when it was about three weeks old. He made the same examination which Dr. Briddon had made, and could verify the existence of a fistulous communication between the rectum and the vagina. At that time he hesitated to operate because of the delicate condition of the

child. His idea was to operate according to the method mentioned by Dr. Briddon, and afterward to close the recto-vaginal fistula.

Dr. HENRY B. SANDS had also seen this child, and advised that nothing be done until it reached a more mature age.

The PRESIDENT said that fifteen years ago he had a case of this kind, in which he performed a similar operation. The patient reached the age of four years, and then died of some intercurrent affection.

Dr. BRIDDON remarked that it was difficult to separate the entire walls of the rectum and bring it down, but he thought it worth the trouble to try to perform the operation.

Dr. ALFRED C. POST referred to a case of absence of the rectum in which he was obliged to bring down the intestine from a height of two or three inches and attach it to an opening in the integument. It did very well for some time, but contraction occurred from neglect on the part of the parents, and afterward he was obliged to dilate the part with tents of soap, and the child had subsequently had free evacuations, and had enjoyed good health.

Excision of the Elbow.—Dr. CHARLES MCBURNEY presented a girl, nineteen years old, upon whom he performed excision of the elbow eighteen months ago for osteitis, which originated in traumatism received two years before the operation. The forearm was flexed at an angle considerably less than a right angle, and the entire arm was quite useless from pain and immobility. The operation was performed by making a long posterior incision, and removing the entire head of the radius, the articular end of the ulna, and one inch of the lower end of the humerus. The patient had now good use of the forearm, and played considerably upon the piano, being able to play for an hour at a time. Flexion and extension and pronation and supination were very good. The patient also had morbus coxarius, for which she was being treated by the use of a mechanical appliance. The operation was performed on the 8th of May, and on the 9th of July the patient was able to perform the present amount of flexion and extension.

Dr. BRIDDON referred to a case in which supuration of the elbow joint continued for seven or eight months, and the sinuses were eventually healed by the injection of a stimulating solution, but it was supposed that the limb was useless. The finger and thumb could be inserted between the extremities of the bones. To aid the patient in using the arm, Dr. Briddon had constructed a tin angular splint, which enabled her to discharge her household duties with considerable facility. Occasionally the angular splint would get out of order, and on one of these occasions, while it was away to be repaired, the patient found that she could use the arm as well as before the operation. From that time the splint was discarded, and she continued to do her household work with a joint which in scope of movement did not compare with that in the case presented by Dr. McBurney.

Wryneck, with Paralysis of the Serrati Muscles.—Dr. A. G. GERSTER presented a patient, a boy, who exhibited wry-neck and a peculiar position of the right shoulder-blade, namely, that characteristic of paralysis of the serratus muscle. The essentials of the history were, that the child, some time before it was one year of age, suffered from whooping-cough. Ever since that time this peculiar position of the head had been noticed. Nothing was noticed concerning the scapula at that time. When the patient was examined superficially, the first point which attracted attention was a peculiar elevation corresponding to the course of the upper border of the trapezius muscle, which made it appear as though contraction of this muscle was present. Indeed, that diagnosis was made by several of Dr. Gerster's colleagues. The position of the scapula, however,

was such that the assumption that it was due to the contraction of the trapezius muscle could not explain it. The contraction of the trapezius which was present would go far to explain the wryneck. In order to fairly explain the causation of the malposition of the scapula, Dr. Gerster anesthetized the patient, and found that the scapula, when the muscle was flabby, did not reach the normal position, as it should have done if the malposition was caused by the contraction of the trapezius alone. Further, when contraction of the trapezius was induced by the faradaic current, the malposition of the scapula was not influenced, and it was evident that the malposition was due to the contraction of the levator scapulae and the rhomboid muscles. He also tested the reaction of both serrati muscles, and found that the normal power of these muscles was not present on the right side, as could be easily illustrated by irritation of the muscles on the left side. Contractions of the serrati muscles on the side of the lesion could be elicited, but they were insufficient to bring the scapula into its normal position.

The scapula was drawn upward and inward toward the spine, and at the same time the inner border of the bone was not in contact with the thorax, but elevated from it, or more prominent than normal. At the same time the entire scapula was rotated about its antero-posterior axis. An apparent tuberosity, corresponding to the upper and inner angle of the scapula, was produced by the upper internal angle of the scapula itself, and not by the contraction of the muscles.

His explanation of the condition was, therefore, that it must have originally been a case of infantile paralysis of the serrati muscles of the right side, and that the contraction of their antagonists and the rhomboids took place then, and out of this contracture was finally evolved which remained permanently. It was a rare malposition, and therefore he presented the case. It was a question whether dividing the contracted muscles would help to correct the malposition. The circumference of the thorax had been measured, and it was ascertained that the affected side was smaller than the other, both in inspiration and in expiration—smaller during expiration by half an inch.

Extirpation of the Kidney.—The PRESIDENT then read a paper on this subject. [See page 721.]

Dr. W. S. HALSTED thought that, irrespective of the question of comparative risk, most would allow that neoplasms of the kidney could be more satisfactorily dealt with through the abdominal incision. Certain operators, who were complete masters of the technique of abdominal surgery, would be justified in preferring and practicing laparotomy in the removal of kidney tumors, whereas the great majority of surgeons might prefer, for the present, to confine themselves to the lumbar incision. Each surgeon should, therefore, be the conscientious judge of his own attitude. Thus it was easy to comprehend why von Bergmann, Thornton, Tait, and others should adopt the abdominal incision; and, although Tait would not confess the secret of his success, it was quite apparent to others that it was to be ascribed to operative skill and most careful asepticism.

Dr. Halsted was inclined to advocate, for the abdominal incision, a line lateral to that recommended by Langenbuch, for two reasons: first, to avoid, if possible, subsequent hernia, and second, to enable one, early in the operation, to sew off the operation-field from the general peritoneal cavity. It seemed to him that the suggestion from Hagen Torn ("Centrabl. für Chir.," No. 35, 1884) to cut through the rectus abdominis muscle rather than through the linea alba, to prevent hernia after ovariectomy, was a good one. He advised also that especial attention should be paid to the sewing of the incision through the oblique and transverse abdominal muscles. A cross-cut of such a wound would give two lines, irregularly concavo-convex, demonstrating that the various tissues had retracted unequally,

and that, to make the cut surfaces offer the broadest possible face, it would be necessary to convert the undulating into plane surfaces. This could be done by one or more rows of buried sutures aimed at the concavities. To enable one to operate outside of the peritoneal cavity, Dr. Halsted recommended a procedure to which he had resorted in his case. The abdominal cavity was opened along Langenbuch's line. In future cases he would open it outside of this line, as just described. In front of the carcinomatous kidney was the descending colon. The parietal peritoneum was a second time divided at about three inches from the outer border of the colon and the kidney readily removed. The hemorrhage from the kidney-bed was rather profuse from, perhaps, about a hundred oozing points. This was only partially controlled by about as many catgut ligatures. The peritoneal cavity was then closed off from the field of operation by uniting the mesial edges of the twice-divided peritoneum. Thus an extra-peritoneal cavity was formed, bounded postero-externally by the kidney-bed and the abdominal paries which had been robbed of its peritoneum; antero-externally by the isolated strip of peritoneum, the margins of which were the lateral edges of the original parietal incisions; and internally by the outer surface of the somewhat curtailed peritoneal cavity. The extra-peritoneal cavity was drained (anteriorly) by two large rubber tubes. The hemorrhage stopped at once from intestinal pressure and convinced the operator that he might have spared himself much trouble and the patient some shock, if, instead of applying so many ligatures, he had earlier closed off the peritoneal cavity as described. The patient recovered rapidly from the shock of the operation and passed a comfortable night. In the morning he developed uræmic convulsions, which recurred at intervals until his death, about twenty-seven hours after the operation. He secreted, in this time, only an ounce and a half of urine.

A complete autopsy was not allowed. Injection of the extra-peritoneal cavity demonstrated that the peritoneal cavity had been completely shut off. In the latter was about a drachm of slightly stained serum, but there were no other evidences of peritonitis. Microscopical examination revealed advanced interstitial disease of the right kidney. Dr. Halsted thought it fair to attribute the convulsions to the condition of the right kidney, for the patient's pulse was too strong to make it probable that diminished blood-pressure alone might have been the cause of the oligouræsia.

(To be concluded.)

NEW YORK COUNTY MEDICAL ASSOCIATION.

Meeting of December 15, 1884.

The President, Dr. WILLIAM DETMOLD, in the chair.

Discussion on Asiatic Cholera.—Dr. E. G. JANEWAY opened the discussion. He answered the practical questions connected with the subject as they were put at the cholera conference of the Berlin Health Office recently: 1. Whether cholera was produced by a specific infectious agent coming from India. Dr. Janeway thought almost all scientific men at the present time would answer this question in the affirmative. 2. Was the infectious matter only spread through human intercourse? 3. What were the carriers to distant countries—whether ships, goods, letters, sound men, or men sick with cholera? It had been shown beyond doubt that the cholera poison could be carried by certain forms of merchandise. 4. What were the carriers of the infectious matter in near neighborhoods—whether corpses, infected articles, such as food, wearing apparel, water for cooking or for domestic purposes, the air, or insects? It was difficult to give a positive answer to the questions embodied in the fourth interrogatory. It would seem that, at least under

certain circumstances, the body of a person who had recently died of cholera might contain a considerable number of the comma bacilli, which, coming in contact with the clothing, might spread the disease. It was perfectly reasonable to suppose that water for drinking and domestic purposes might afford very favorable means for carrying the cholera germ, but it had been proved by Koch that, so far as the comma bacillus was concerned, it could not live in perfectly clear water; there must be a certain amount of impurity in the water to encourage its growth.

5. Was it necessary for the cholera dejecta to undergo a change in the ground before they could become infectious? There could be little doubt that external surroundings might favor the spread of the disease, but that any such change in the dejecta was necessary to the development of the disease was another question. Certain facts went to prove that the dejecta might be infectious without undergoing any decomposing change after leaving the body. The fact that certain persons had swallowed the dejecta of cholera patients, and had not afterward acquired cholera, proved nothing definite except that such persons were not susceptible to cholera at that time.

6. Was the infectious matter contained alone in the dejecta, or in them and the vomited matter, or did it also exist in the urine, the breath, the perspiration, and the blood? Many persons believed that it existed alone in the dejecta. For practical purposes, it was better to treat each case as if both the vomited matter and the dejecta were capable of carrying the infectious matter.

7. Did the infectious matter possess great resisting power? Clinical observation justified us in answering in the negative, and Koch's experiments had proved that the comma bacillus did not possess great resisting power. We had had cholera in New York several times, and it had always died out in a comparatively short period.

8. Was the infectious germ killed in a short time by drying? This question, so far as the comma bacillus was concerned, could be answered in the affirmative; this germ would not outlive a day of drying, and usually not over three hours.

9. Did the infectious matter find entrance into the system through other channels than the digestive tract? This was an important question which should be positively settled, and yet it was very difficult to say whether the poison of cholera could be inhaled into the lungs and thus indirectly reach the alimentary canal, or whether it always gained entrance by being swallowed with the saliva, with the food, or with impure water.

10. Were special individual dispositions necessary for the poison to be active? This interrogatory all knew should be answered in the affirmative with regard to cholera as with regard to all other infectious diseases. He knew of no more marked illustration of the influence of individual predisposition in the contraction of contagious diseases than that of the case of Dr. Mott, of the Riverside Hospital. Dr. Mott had charge for a year of five hundred case of typhus, and did not himself contract the disease. The next year he had charge of a group of patients, twenty-three per cent. of whom died of typhus, and yet he escaped having the disease. He again had charge of about twenty patients, only one of whom died, and from this group he himself contracted the disease, and it proved fatal.

11. How long was the period of incubation? It had been said, at the Cholera Conference in Berlin, that the period of incubation was not less than two days, and not more than five.

12. Did one attack of cholera give immunity from future attacks?

13. Was the infectious agent of cholera the comma bacillus? The reasons for answering this in the affirmative had been plainly set forth by Professor Flint, in his paper recently read

before the society. But at that time Koch had not yet been able to show that the comma bacillus, when introduced into the alimentary canal of the lower animals, would cause cholera; since then, however, he had been able to demonstrate that fact, supporting previous observations made by other gentlemen, and this, as it were, constituted the missing link in the proof that the active agent in the production of Asiatic cholera was the comma bacillus.

In view of the fact that cholera was extremely likely to be brought into the United States next spring or summer, certain questions with regard to sanitary measures should at this time be well considered.

With regard to quarantine (which, however, was a subordinate question), should it be maintained or not? While it had not prevented the bringing of cholera to this port in the past, it might, if properly carried out, do so in the future. It was specially desirable in cases in which the boxes of immigrants coming from a cholera-infected port had not been opened on the way. A very important question was, What measures should be taken for putting New York city in a condition to prevent the spread of cholera if it was imported? There were many conditions in the city which, if corrected before cholera broke out, would in a great measure tend to prevent the spread of the disease. There were some things which should be done during the winter, because, if not done until cholera reached the port, they would be done in a hurry and at a disadvantage. To begin with, few of us realized how many privy vaults were in use in the city which were not connected with the sewers, and still fewer persons understood the reasons why such privy vaults were in existence. The reasons were, that certain judges of the law maintained that a privy vault was not a nuisance unless it made a stink in the locality at the time of the pending of the suit. It seemed to the speaker that these privies ought during the winter to be cleaned and disinfected, and, if necessary, more than once. It would be a great advantage to the city, notwithstanding the hardships which it might cause individual property-owners, to substitute for such vaults what were called trough closets. It was also important that the Board of Health have sufficient money to keep incessant watch in all doubtful cases of diarrhoea. It was not sufficient that a sum of money be appropriated to be used in case the cholera should appear, but a certain amount should be devoted to defraying expenses incurred in investigating during the spring all cases of disease of a suspicious character. It would also be well to place a sufficient sum of money at the disposal of the Health Board, enabling them to prepare places in the different wards where persons taken down with cholera could be immediately transferred, without the necessity of transportation to a distant hospital, for in many instances patients would die of the disease before they could be taken to a hospital.

Another means for the prevention of the spread of cholera was to carry the sewers out to the end of the piers, thus getting rid of the foul odors which existed in many of the slips along the river-front. It was not certain that the water in the rivers contained a sufficient amount of salt to destroy all the comma bacilli if they were not swept out into the current.

The number of deaths from cholera in this city in 1832 was, in round numbers, 3,500; in 1834, 900; in 1849, 5,000; in 1852, 3,000; in 1854, 2,900; and in 1866, 1,100. There were, then, fewer deaths from cholera in 1866 than in 1832, notwithstanding the large increase in population. He thought that the measures taken against the spread of cholera in 1866 had saved the city many lives. This pointed to the importance of again adopting efficient means of prevention. What were the best means of disinfection? Should we use agents which would arrest the growth of the germ, but which Koch would consider as entirely

unnecessary because supererogatory? Should we trust to the drying process alone, or should we also fumigate? It would be wiser to resort to other disinfectants also, as well as to drying, although it might prove superfluous, and especially it would be of advantage to fumigate houses with sulphur, as we should then be certain that they would afterward be thoroughly ventilated, whereas, if no disagreeable odor was present, it would be difficult to induce the people to permit of thorough ventilation where cholera had existed.

Should the streets be kept dry, or should the gutters be flooded with clean water, or a disinfecting solution? What disinfectants should be used? What discharges should be disinfected? Simply the dejecta of cholera patients, or the discharges in all cases of diarrhoea and dysentery during a cholera epidemic? The speaker believed that cholera had often been spread from patients who had been regarded as having a simple diarrhoea. How should cases of cholera morbus be treated in years when cholera was expected to make its appearance? He had known families to be subjected to a great deal of fear, inconvenience, and expense because one of the members suffering from cholera morbus was said by the physician to have cholera. Here the question would arise, and had arisen in the Cholera Conference before the Berlin Health Office, Should we trust to a diagnosis of cholera based upon the presence of the comma bacillus? He agreed with Koch, who, in reply to a question, said it would be better to treat a case of cholera morbus as if it were one of cholera if it occurred in a place which was in the neighborhood of a cholera epidemic, notwithstanding the fact that the comma bacillus could not be found in the dejecta. With regard to distinguishing the comma bacillus, Koch said we should not trust alone to examination of the dejecta, but resort to culture media.

The following were some of the agents which Koch had found would prevent the development of the comma bacillus: A temperature below 16° C. Freezing did not kill, but only prevented the growth of the germ. A temperature of 100° C. killed the bacillus. A saturated solution of iodine prevented its growth; also, a ten-per-cent. dilution of alcohol; sulphate of lime, two-per-cent.; alum, one-per-cent.; camphor, one part in three hundred; carbolic acid, one in four hundred; oil of peppermint, one in two thousand; sulphate of copper, one in twenty-five hundred; quinine, one in five thousand; bichloride of mercury, one in one hundred thousand. Drying over an hour, or at most over twenty-four hours, killed the bacillus. As to whether all the agents which prevented its growth also destroyed it, Koch was not prepared to say.

Dr. Janeway said he had not much to offer with regard to the treatment, but would call attention to the recent suggestion to inject large quantities of a saline solution under the skin. In addition to a solution of common salt, bicarbonate of sodium and some other alkalis had been suggested.

The President thought the march which cholera had always taken was by commerce from India to other countries. The question of its being due to a microbe was not, in his opinion, definitely settled. As he had made no experiments or observations in this direction, he could only express an opinion, but we knew that there had been fashions in medicine. That certain secretions would favor the development of certain micro-organisms he had no doubt, but at what time during the gradual development of the disease these organisms made their appearance it was difficult to say. He could remember very well when a very intelligent young man, who had studied in Europe, came to this country and undertook to demonstrate to the medical profession the presence of a cancer cell, but that view had long since been exploded, and we all knew very well that there was no such thing as a cancer cell in the sense in which

that gentleman spoke of it. Then some physician pretended to have discovered a bacterium which was the cause of syphilis, and this again was soon abandoned.

Dr. Austin Flint, Sr., had seen more or less of cholera during every epidemic which had prevailed in this country. In 1832 he was a student, and saw some cases. In 1849 he was practicing in Buffalo, where there were over twenty-five hundred cases and eight hundred deaths. He treated some hundreds of cases in hospital practice. He had recorded the histories of about a hundred, and quoted from those histories in illustration of certain points in the discussion. When he was the editor of a medical journal he expressed the opinion, founded on a study of the epidemic as it appeared in Buffalo in 1849, that the disease could not have been spread from one person to another or by means of a contagious principle. However, irrespective of the question whether or not the specific cause of cholera had been discovered, he had since been led to believe that the opinion expressed in that article was incorrect; he now believed that cholera was a communicable disease. One question had presented itself to him as one of practical moment, namely, whether the cases of apparently ordinary diarrhoea which occurred in considerable numbers during a cholera epidemic were due to the presence of the special cause of cholera. Quoting from his former writings, Dr. Flint said: "Anterior to the appearance of the disease in this city, and during the whole period of its continuance, disorders of the digestive system were extremely common. The proportion of the population that entirely escaped these disorders was small. The disorders consisted in diarrhoea or looseness of the bowels, preceded and accompanied by nausea, griping pains, etc." These symptoms, which could be speedily arrested by treatment, would return again and again as soon as remedial measures were neglected. The patients were longer in recovering their strength than after an ordinary diarrhoea occurring when no epidemic of cholera was present. If in these cases the microbe which was the cause of cholera was present, it would go far toward explaining the rapid spread of the disease. Yet it was not easy to explain the exemption of hospital physicians and nurses from cholera. In one of the hospitals for cholera patients not a single attendant, nurse, or physician contracted the disease.

Dr. Flint then directed attention to the prevention of cholera by the treatment of the premonitory diarrhoeal symptoms. This certainly would be a very important matter in case an epidemic should break out. He was satisfied that the disease was diverted in many of the cases in which the premonitory symptoms were treated during the epidemic in Buffalo. The treatment should be by absolute rest and opiates. But the diarrhoea at first was of such a mild nature that it was almost impossible to induce the people to regard it as the precursor of cholera, and to treat it accordingly. For this reason he thought it an important sanitary precaution to establish a system of house-to-house visitation, having a physician look in upon every family in the city once or twice a day during a time of cholera, and inquire whether there were any cases of simple diarrhoea in the house. The persons making these observations should be provided with simple measures, accompanied by directions how to use them, which should be left with the family.

Dr. S. S. Purple had had experience in the epidemic of cholera in New York city in 1849, and related the history of the outbreak of the disease. It was first brought to port the second or third of December, 1848, and afterward cases occurred in the Five Points, rapidly increasing in number. The Five Points at that time was in an exceedingly foul condition, and the disease spread from what was known as "Hug-pen Alley." The history of that epidemic showed very clearly the necessity of cleaning any foul places that might now exist in the city.

Dr. JOHN DWYER had had charge of about three hundred cases of cholera during the epidemic of 1866, and about half of them proved fatal. He made post-mortem examinations in twenty-four cases, and the only peculiar condition which fixed his attention was the fact that in nearly all the cases the gall-bladder was quite full of bile. He was unable to give any explanation of the phenomenon. Dr. JANEWAY had stated that the epidemic on Blackwell's Island had not been traced to any particular case. Dr. Dwyer said it was introduced into the hospitals on Ward's Island by a woman named McCoy, and a fact opposed to the length of the period of incubation, which Dr. Janeway had cited as being not less than two days, was that one patient contracted the disease and died within twelve hours after the contagion had been brought to the Island, while another died within twenty-four hours afterward. The mortality was not so great among patients treated in pavilions as among those treated in the hospital proper. In two cases of pregnancy the child died, in one Caesarean section having been performed. It was also remarked that the excretions of one of the pregnant women who had the cholera were cold.

Dr. JANEWAY said, in closing the discussion, that the only explanation which suggested itself to him of the uniform presence of bile in the gall-bladder in the cases examined by Dr. Dwyer was that possibly the bile was left dry by the excessive discharge of fluid during the course of the disease.

Typhoid Fever.—Dr. JANEWAY then presented parts of the intestine from two patients who had had typhoid fever, in the one case the lesions being very trifling indeed (only three patches of ulceration), and in the other very extensive. In the former case the patient died in a convulsion due to Bright's disease. In the latter case the temperature at first was low, and did not present the so-called characteristic temperature of typhoid fever; but it afterward rose to 103° or 104° F. Not infrequently typhoid fever was mistaken for malarial fever, and it was often difficult to make a positive diagnosis. Cases of typhoid fever during the present year might be said to be characterized by the absence of diarrhoea, and the small number of ulcers which formed in the intestines might often explain this clinical fact. But it was common to give patients suffering from typhoid fever a milk diet, and that in itself would tend to prevent diarrhoea.

Dr. S. T. HUBBARD inquired whether Dr. Janeway would expect to find extensive lesions in the intestine in cases of typhoid fever with a high temperature.

Dr. JANEWAY replied, Not necessarily.

NEW YORK PATHOLOGICAL SOCIETY.

Meeting of November 12, 1884.

The Vice-President, Dr. VAN GIESON, in the chair.

Carcinoma of the Breast.—Dr. WILCOX presented a scirrhous tumor of the breast.

Dr. GARRISH inquired whether any of the members had known a patient to live ten years after removal of a cancerous breast. The late Dr. Valentine Mott, he said, had never known a patient to live longer than six years.

Dr. WYETH had operated seven years before, and the patient was still living.

Dr. CARPENTER had assisted at an operation eight years before, and there had been no return.

Pachymeningitis Hæmorrhagica, with Cerebral Hæmorrhage.—Dr. DIXON presented a specimen, and related the history of a case, that of a man thirty-three years of age, who entered Charity Hospital October 27, 1884. He had been a hard drinker for some years. About six months before, while at

Madagascar, he had what he termed chills and fever, with headache and some epigastric pain. The headache was of a burning character. He had had some venereal disease. When Dr. Dixon saw him, November 3d, he was easily aroused, but was drowsy; the pupils were a little enlarged, but equally. September 27th he had fallen down stairs, striking the left side of the head, but there was no sign of fracture. The grasp of the right hand was weaker than that of the left; the patellar reflex on the right side was exaggerated. The diagnosis lay between four conditions: meningeal hæmorrhage, cerebral hæmorrhage, pachymeningitis interna hæmorrhagica, and syphilitic tumor. At the autopsy the upper surface of the left hemisphere was found to be covered by a false membrane, the result, apparently, of old pachymeningitis hæmorrhagica, and in the parietal region a fresh hæmorrhage had taken place. The condition was probably due to military aneurysms, although the examination which had been made had not revealed their presence. The kidneys and heart were normal.

Dr. SEGIN thought the case interesting because of the slight symptoms which had been present, and in that respect it resembled two cases which he had seen, in which the patients complained of severe headache. The first patient became comatose, but not paralytic. The autopsy revealed hæmorrhagic clots over both hemispheres. In the second case there were clonic spasms, but there was no paresis, and the patient finally died comatose. In this case the large quantity of blood in the cranial cavity had depressed the cerebral convolutions, making them appear concave instead of convex. Military aneurysms could usually be discovered by sacrificing the specimen, allowing it to decompose in water.

Dr. PEARODY said the case was further interesting from the comparative youth of the patient. Last spring he made an autopsy on a boy nineteen years of age, and found cerebral hæmorrhage, but in that case the aorta was abnormally small, and there were military aneurysms at the site of the hæmorrhage. Pachymeningitis hæmorrhagica might not give rise to symptoms until a large hæmorrhage took place.

Dr. VAN SANTVOORD thought sufficient stress had not been laid upon the fall which the patient had sustained in Dr. Dixon's case. When an *interne* in Bellevue Hospital he used to see patients with symptoms like those described by Dr. Dixon, but also giving a history of alcoholism as well as of a fall, and their condition might have been regarded as due to alcoholism, but that the autopsy showed fracture at the base of the skull (which, however, seemed not to have given rise to the symptoms) and hæmorrhage on the convexity.

Goitre.—Dr. WYETH presented a goitre attached to the trachea which had been partially removed by operation. The patient was thirty-six years of age, a native of Germany, and had carried the goitre since she was ten years of age, but had suffered no inconvenience from it until three years ago, when it began to develop rapidly and pressed upon the larynx, interfering with respiration, and giving rise to cough, with pain and headache. The tumor was found to be very vascular, and, after about three hours' steady work, the patient being all the while under the influence of ether, the operation for its removal was discontinued. A large number of ligatures had been applied. The patient lived two hours.

Removal of the Kidney for Pyelo-nephrosis.—Dr. H. C. COZ presented some specimens from a patient at the Woman's Hospital, who had a movable abdominal tumor which disappeared at times after the discharge of a large quantity of urine. An exploratory incision was made, and a kidney, the seat of hydro-nephrosis, was removed. Peritonitis developed, and the patient died eight days after the operation. Very little urine was secreted toward the close of life, and it contained traces of

albumin and casts. The autopsy showed that the ureter had slipped from the ligature, and some of the veins had also retracted, giving rise to slight hæmorrhage underneath the peritoneum. The only apparent cause for the collection of the fluid in the renal cyst was a valve-like fold of the mucous membrane at the entrance of the ureter into the pelvis of the kidney. An interesting fact in the case was that it showed the condition of the pelvic organs during menstruation. They were all highly congested. The uterine sinuses were gorged with blood, and resembled a sponge. The lining membrane was covered by a film, composed of epithelium and blood corpuscles, which could be lifted with the forceps.

Dr. PEABODY said, with reference to a question raised regarding uræmia, that he thought too much stress had been laid upon the presence of urea as a cause. The condition known as uræmia he thought had been proved to be independent of the retention of urea in the economy. It had been shown that more urea could be injected into the veins of a dog at a single sitting than a human being could retain through any diseased process of the kidneys, without producing uræmic symptoms.

Dr. SEGUN had been of the same opinion, but recently it would seem to have been shown that uræmia could be produced by the hypodermic injection of urea.

Dr. WENDT thought urea could not be said to have no connection with the production of uræmia. Even its hypodermic injection in dogs did give rise to symptoms, although they were not exactly like those of uræmia in the human subject.

Dr. PEABODY said that one fact which favored his opinion was that in the fowl urea was excreted by the intestine after occlusion of the ureter, and he doubted not the same was true in man.

Anæsthesia of the Trigemini, Occipitalis Major, and Cervical Plexus, with so-called Trophic Ulcer of the External Ear.—Dr. SEGUN, by the courtesy of Dr. Pomeroy, presented a young man suffering from a perforating ulcer of the ear which had developed after the existence of anæsthesia in the region of distribution of the trigemini, occipitalis major, and a branch of the cervical plexus. Dr. Segun referred to the old theory which assigned ulceration in anæsthetic regions to a trophic or nervous origin, and cited the experiments which went to prove that anæsthesia simply favored ulceration or the development of sores after traumatism.

Congenital Inguinal Kidney.—Dr. WENDT presented an inguinal kidney which he had removed from the body of a woman who died of senile changes at St. Francis's Hospital, in her eighty-seventh year. She denied having ever been sick, but had worn a truss for a supposed hernia. There was no visible pelvis of the kidney; the ureter was greatly shortened; there was no supra-renal capsule in connection with it; the renal artery did not spring from the abdominal aorta. The other kidney was in its normal position.

Endarteritis Obliterans.—Dr. PEABODY presented a part of the circle of Willis and some other small arteries at the base of the brain, from the body of a man, thirty-eight years of age, who was brought to the New York Hospital the 1st of November, unable to speak. He was intelligent, and there was no paralysis of motion or of sensation. There was exaggerated patellar reflex on the right side. The aphasia was distinctly ataxic. The following morning there was complete right hemiplegia. After two days there was a rise of temperature in the evening, which disappeared in the morning. The fourth day attacks of pulmonary œdema developed, in one of which the patient died. Just before death the temperature rose to 108° F. The urine was normal. At the autopsy the lumen of the basilar artery was found greatly obstructed by endarteritis obliterans. There was a small spot of softening in the left corpus striatum

and internal capsule. The blood-vessels in this region, on both sides, were distinctly calcareous. The left Sylvian artery was normal.

Aneurysm of the Arch of the Aorta; Pneumonia.—Dr. ROBINSON presented a specimen and related the history of a case of aneurysm of the arch of the aorta, pneumonia developing afterward which resulted in death. He directed special attention to the difficulty of recognizing the pneumonic condition in such cases, and said that it was liable, as in the present instance, to go unrecognized until revealed by the autopsy.

Tubercular Meningitis; Latent Catarrhal Phthisis.—Dr. VAN GIESON presented specimens which, he said, illustrated in a remarkable degree the conservative and curative processes of nature unaided by the physician's skill or art, and also illustrated the aphorism of Niemeyer, that the greatest danger to a phthisical subject was the development of tubercles. The patient was a laborer whom he first saw November 5th, when he was in active delirium. There was no special elevation of the temperature; there was very marked condensation at the right apex. The man became violent, and was sent to St. Catherine's Hospital, where he remained in a state of partial coma, varied by active delirium. He complained of severe pain in the head. The autopsy showed the appearances usually seen in tubercular meningitis. The upper portion of the right lung and the lower portion of the left were almost completely filled with calcified material, the result of an old catarrhal phthisis, from which the man had perfectly recovered. He had been well during the last thirteen years until his last illness.

Meeting of November 26, 1884.

The President, Dr. GEORGE F. SHRADY, in the chair.

A Coccyx removed by Operation.—Dr. WYETH presented a coccyx which he had removed from a man thirty-six years of age, who, four years ago, sustained an injury by falling backward on the ice. No symptoms were noticed at the time of the fall, but a few months later the patient was seized with spasms of the sphincter-ani muscle, which condition grew worse, and led to two operations for fissure of the anus, the first operation being by the knife, and the second by stretching of the sphincter. Dr. Wyeth recognized displacement of the coccyx by the fact that the stools were flattened and grooved, evidently on account of some obstruction. He afterward operated upon the same patient for inguinal hernia by Heaton's method. The patient was still a monomaniac on the subject of his rectal trouble, but Dr. Wyeth thought that there would finally be entire cessation of the symptoms.

A Modification of Otis's Urethrotome.—Dr. WYETH also presented Otis's urethrotome, which he had so modified by means of a ratchet that, when cutting through even the densest tissue, the extent of the incision could be restricted within absolute limits.

Dr. PEABODY had, during the past summer, removed the coccyx in a case of coccygodynia without giving relief from the symptoms; but the woman was afterward cured by measures directed against neuralgia.

Dr. GARRISH had cured the symptoms in several cases of injury to the coccyx by dividing the nerves subcutaneously close to the bone.

Dr. CARPENTER said that Dr. Goodell, of Philadelphia, after operating both in cases due to injury and in those due to neuralgia, had reached the conclusion that in cases of coccygodynia the operation which promised the best results was removal of the bone, whereas in essentially neuralgic cases anti-neuralgic measures should be resorted to.

Pulmonary Gangrene in Pneumonia.—Dr. HOLT presented the lungs of a boy, three years of age, who died, after two weeks'

illness, with pneumonic symptoms. The child had always been very healthy, and had never had any sickness except a bronchitis in its first year. At the autopsy a sacculated pleurisy, with turbid serous effusion, was found over the middle of the right lung behind; both lungs were firmly adherent to the chest walls, the right one especially. There was extensive formation of new membrane over the entire surface of the right lung. The upper lobe showed only congestion and œdema. The upper portion of the lower lobe presented the usual gross appearances of broncho-pneumonia. At the base were two large, irregular areas, dark in color, grayish at the borders, which, when cut into, were found to contain gangrenous spots, varying in size from that of a walnut to that of a pea. The contents could be washed away with a moderate stream of water. There was no marked separation between the necrotic and the living tissue. The areas of gangrene did not correspond to the distribution of the pulmonary artery, but to that of the bronchi. The bronchi were much inflamed. The heart was normal. The kidneys were enlarged, light in color, and soft, and the markings were quite indistinct. There was nothing to attract attention to the urine during life, but that remaining in the bladder after death was found to contain albumin and casts. Dr. Holt was not inclined to think there was any connection between the occurrence of gangrene in the lung and the disease of the kidneys. He quoted the literature of gangrene of the lung occurring during the course of pneumonia, and said that such cases were very rare indeed, and were found less frequently in children than in persons more advanced in years.

Urea not a Cause of Uræmia.—Dr. PEABODY said that at the last meeting of the society he had expressed the opinion that too much stress had been laid upon urea as a cause of uræmia, his opinion being based more or less upon observations in the lower animals. Dr. Seguin had been of a similar belief, but spoke of experiments recently made, from which it would seem that uræmic symptoms might be produced in the lower animals by the injection of urea into the blood. Dr. Seguin had since informed Dr. Peabody where he could gain access to the records of the experiments to which he had referred, and Dr. Peabody took occasion to show to the society that it would require, according to the amount of urea necessary in these experiments to produce death by injection into the circulation of the dog, one pound and a half of urea to produce a fatal result in man. But it had been shown that in a man of one hundred and fifty pounds weight, dying of uræmia occurring in the course of kidney disease, the blood contained only nine one-thousandths of a pound of urea. There might be apparent fallacies in this manner of drawing conclusions, but he thought it showed very conclusively that such experiments upon animals could give us little useful information as to the cause of uræmia in man. The injection into the blood of benzoate of sodium or of sulphate of sodium, agents which were not in themselves poisonous, would likewise produce uræmic symptoms. The experiments cited went no further than to show that the injection of a certain amount of any foreign substance into the circulation would produce death; they did not show that uræmia was due to the presence of urea in the circulation. He had seen several fatal cases in which there had been entire suppression of the urine, but none of the so-called uræmic symptoms.

Abscess of the Liver with Obscure Symptoms.—Dr. PEABODY also related the history of a case, and presented specimens, there being certain indefinite symptoms leading him to suppose that the man had once had typhoid fever, and that his last illness was due to a relapse of that disease, but the autopsy showed two abscesses of the liver, the larger containing half a pint of pus; there were also ulcers of the large intestine. The stools during life had presented the ordinary appearance of stools after

the taking of compound cathartic pills, which the patient had received for constipation.

When asked as to the cause of the abscesses, Dr. Peabody replied that they were undoubtedly due to the absorption of septic matter from the intestinal lesions.

Sarcoma of the Kidney.—Dr. FERGUSON presented a kidney, the seat of sarcoma, supposed to be congenital, removed by operation from a child four years of age. The history of the case had already been put on record by Dr. Little.

Dr. FERGUSON also presented a sarcoma of the first phalanx of the right ring-finger, following an injury, which contained a large number of so-called giant cells.

In reply to a question by Dr. Wyeth, Dr. PEABODY and Dr. NORTHCOTE said that it was very seldom that a case of congenital sarcoma came under observation.

Secondary Aneurysm of the Abdominal Aorta.—Dr. DIXON presented an aneurysm of the abdominal aorta, removed from the body of a woman twenty-six years of age, who was admitted to the hospital November 18th, and died on the 21st. Her father died of phthisis, and her brothers and sisters died young. There was no history of syphilis. Since last spring she had been treated in St. Luke's Hospital for femoral aneurysm, which was reduced by pressure and she was discharged cured. Three months ago her courses ceased, the appetite failed, and there was nausea, with some vomiting. A month ago the patient noticed a lump in the abdomen, which pulsated. She was weak, anæmic, and constipated, vomited a great deal, and could not sleep, because of pain. Physical examination revealed a systolic heart murmur, and a pulsating tumor in the epigastric region, which was the seat of a distinct impulse synchronous with the second sound of the heart. The tumor had a marked thrill, with a double *bruit*. The patient died in collapse. At the autopsy there was found an aneurysm of the abdominal aorta, near the celiac axis. Nearly the entire wall of the aorta was involved in the sac, and anteriorly there was a rupture about half an inch in circumference. Above the aneurysm was an atheroma, and below a constriction of the vessel scarcely admitting the little finger.

Fibroid Tumors of the Uterus.—Dr. COE presented two uteri with fibroids, one of which had been removed by abdominal section, the other at an autopsy. In the latter case Hegar's operation had been performed. One of the tumors presented a large cicatrix upon its anterior surface, leading to the inference that it had sustained some previous injury. No history of such injury had been obtained. Dr. Coe remarked that in the case of hysterectomy the pedicle had been treated by the intraperitoneal method, which he regarded as inferior to the extraperitoneal, judging by the favorable results which he had observed in German clinics, where the latter procedure was generally adopted. There was always great danger of septicæmia when such a large stump was returned to the abdominal cavity.

Miscellany.

THERAPEUTICAL NOTES.

Experiments on the Antiseptic Action of the Salts of Copper.—M. Bochefontaine ("Gaz. hebdomadaire de médecine et de chirurgie") publishes the results of a series of experiments undertaken principally with the idea of testing the alleged value of copper as a prophylactic of cholera. He concludes that, although a solution of sulphate of copper of a strength of one to one hundred may not prevent the development of certain vegetable spores, it will arrest the growth of the vibrios. A solution of one to one thousand, however, does not check the development of the latter.

Hypodermic injections of the salt do not arrest the course of parasitic diseases induced artificially in animals. The practical deduction is that, even if sulphate of copper does act upon the contagious element of cholera, it has no influence upon the vibrios or microbic germs.

Kairine in the Treatment of Yellow Fever.—Dr. Naegeli, of Rio de Janeiro ("Berlin. klin. Woch."), states that, in seven severe cases of yellow fever treated with this drug, five patients recovered. He gave fifteen grains hourly so long as the temperature remained high. Even black vomit does not contra-indicate the use of kairine. He states that the delirium disappeared, the patients enjoyed a refreshing sleep, and convalescence was uninterrupted and rapid. Besides kairine, the patients received nothing but iced drinks.

The Purity of Iodoform.—The "Gazzetta degli Ospitali" contains an article on this subject in which the following test is mentioned: Stir up the iodoform in a quantity of distilled water, and add to the filtrate an alcoholic solution of nitrate of silver. If a precipitate of reduced silver is deposited within twenty-four hours, it proves that some foreign substance is present. Pure iodoform, the writer states, if kept for some time exposed to air and light, acquires toxic properties.

Rosinol.—Gautrelet ("Gaz. hebdomadaire de médecine et de chirurgie.") describes this substance as a yellowish, oily fluid, of a peculiar odor, having the composition $H_{12}O_{23}$. It contains a number of bodies, such as terebene, colophene, cresylic and phenic acids, and creasote; hence its combined tonic, antiseptic, and astringent powers. The writer recommends rosinol as an external application, especially in surgical dressings. He says that it has a specific action in elytritis and endometritis, and remarks that it is very useful in obstetrics. Internally, it is a valuable agent in the treatment of typhoid fever, cancer and ulcer of the stomach, and, in fact, in all lesions of the gastro-intestinal mucous membrane. By reason of its marked astringent action it is particularly indicated in catarrhal affections of the respiratory tract.

Beech-Creasote in Pulmonary Affections.—In the same journal Dr. Lasné recommends a combination of creasote, balsam of tolu, and Norway tar in the treatment of pulmonary affections. He gives the following formula:

Pure beech-creasote.....	1 minim;
Purified Norway tar,	
Balsam of tolu, each.....	1-5 minim.

Inclose in a capsule. In incipient phthisis, two such capsules should be given morning and evening. In advanced cases the number of capsules may be increased to twelve daily.]

Lactate of Iron.—The "Union médicale" publishes the report of a commission appointed by the *Académie de médecine* to examine into the therapeutic value of this preparation. The report speaks in the highest terms of the lactate, as being one of the most useful of the preparations of iron. The dose recommended is from six to twelve grains daily.

Arsenic in Pulmonary Tuberculosis.—Leyden ("Gaz. hebdomadaire de médecine et de chirurgie.") has employed this remedy in twenty cases without results. He states that he was unable to perceive the slightest influence upon either the general or the local condition of the patients.

Hippurate of Lithium.—In the same journal Poulet continues his article on the hippurates, to which we lately called attention. He recommends the following preparation in the treatment of gravel:

Carbonate of lithium.....	40 grains;
Hippuric acid.....	9 drachms;
Warm water.....	30 ounces;
Sugar.....	40 "

By the resulting reaction hippurate of lithium is formed, and each teaspoonful of the mixture will contain four grains of that salt. M. Poulet states that hippurate of lime is the best antidote in carboic-acid poisoning that we possess, being far superior to the saccharate.

Apomorphine in Nervous Affections.—Dr. Weill ("Lyon médical") has used this drug in several cases, and summarizes his results as follows: 1. The hydrochlorate, given hypodermically, in doses of from one thirtieth to one tenth of a grain, has a favorable action in various spasmodic affections, such as obstinate hiccough. 2. It also acts well in cases of a convulsive character, such as epilepsy and chorea. 3. By using the drug carefully, the sedative effects may be produced without the nauseating action.

Submucous Injections of Chloroform.—M. Gaspard Guillot contributes his personal observations on this subject in a letter to the "Progrès médical." He recommends the treatment in cases of obstinate dental neuralgia and alveolar abscess. Two or three drops should usually be injected at a time. The writer refers to the extensive experience of Dr. Doss, who has given a large number of the injections, with perfect success. The pain was quickly subdued, and no bad results followed.

Hamamelis.—Dujardin-Beaumetz ("Bull. gén. de thérap.") suggests the following as a convenient formula for the administration of this drug as a remedy for hemorrhoids:

Fluid extract of hamamelis,	
Syrup of bitter orange-peel, each.....	3 ss;
Tincture of vanilla.....	gtt. xx.

Dose, a teaspoonful.

A Suppository for Anal Fissure.—M. J. Simon ("Union médicale") gives this formula:

Extract of belladonna.....	1 drachm;
Poplar ointment *.....	2 drachms;
Cocoa butter.....	q. s.

Divide into fifteen suppositories. One to be used every night.

Nothnagel on the Treatment of Fever.—The "Deutsche Medizinische Zeitung" publishes an address delivered by Professor Nothnagel before the Society of Physicians of Vienna, the subject of which is so important that we transcribe a few of the sentences. Speaking of the needless alarm felt by physicians at the presence of a moderately high temperature, Nothnagel says: "I would not neglect this opportunity of lifting up my voice in this place against the (I can give it no other name) *abuse*, which has prevailed almost universally in practice, of wishing to treat fever *à tout prix*. If the physician is called to a patient who fell ill yesterday, and to-day has a temperature of 38-5° C. [101° F.] or 38-7° [101-6°]—a positive diagnosis can not be made, since no certain local affection is yet to be discovered—his treatment consists in ordering quinine or some other antipyretic. In order not to do any harm, a small dose is prescribed, but, at any rate, quinine is given, with the idea that the fever must be opposed. . . . I am firmly convinced, and hope, that this false and erroneous use of quinine which is at present the fashion will after a time again disappear. I need not remark that, as quinine is administered in the majority of cases, it is perfectly useless for the lowering of the temperature. One, two, three, five decigrammes—even a gramme, when distributed over the twenty-four hours—have no effect; on the contrary, actual harm is done. . . . According to my conviction, with which many other investigators agree, fever, in a very large number of cases, belongs to the most beneficial influences, to those phenomena and processes of reaction which we may regard as compensatory. What rôle these compensatory processes play we know not. . . . Temperatures which exceed 40° C. [104° F.] must however, be energetically controlled, but temperatures of 39° [102-2° F.] do not require such vigorous treatment, especially in diseases which run a brief course. In short, it may be said that a temperature which does not exceed 40° C. [104° F.] does not injure the patient."

Albuminuria as Contra-indicating Ovariectomy.—Dr. R. W. Wilcox, of New York ("St. Louis Med. and Surg. Jour."), in an interesting article on this subject, compares the results of his own clinical observations with those of a large number of prominent authorities. He distinguishes between albuminuria due to chronic Bright's disease and that form which is occasioned or aggravated by the mechanical pressure of the tumor. A simple albuminuria, he concludes, should certainly not be considered as a contra-indication, since it may be caused by the presence of the tumor. Given even a parenchymatous nephritis, this may be, and probably is, increased by the tumor, and the surgeon should not on this ground deny the patient her only chance for life. In the light of the few statistics which we have, and of the great number of cases—many of which must be complicated with renal disease—in which the operation is successfully undergone, we have no reason to regard albuminuria as a weighty contra-indication.

* An ointment made from fresh poplar-buds and the leaves of the poppy, belladonna, hyoscyamus, and *Solanum nigrum*.

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